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Mountains Top Off New England

With 38 Illustrations and Map F. BARROWS COLTON
32 in Natural Colors ROBERT F. SISSON

A Journey to "Little Tibet"

With 30 Illustrations and Map ENAKSHI BHAVNANI
21 in Natural Colors VOLKMAR WENTZEL

Flamingos' Last Stand on Andros Island

With 20 Illustrations and Map 14 in Natural Colors

PAUL A. ZAHL

I Walked Some Irish Miles

With 20 Illustrations and Map 10 in Natural Colors

DOROTHEA SHEATS

Saving Earth's Oldest Living Things

With 17 Illustrations 11 in Natural Colors RAYMOND MOULIN

Torchbearers of the Twilight

With 9 Illustrations

FREDERICK G. VOSBURGH

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NATIONAL GEOGRAPHIC MAGAZINE



Mountains Top Off New England

By F. BARROWS COLTON

With Illustrations by National Geographic Photographer Robert F. Sisson

HOUGH the calendar insisted it was only August 19, a wild and decidedly wintry storm was raging across the 6,288-foot summit of Mount Washington, top of New England.

Well anchored to the rocks though it was, the staunch little tiptop hotel shook, and even the bed in which I slept trembled under the obslaught of the thundering 60-mile-an-hour gale. Outdoors, that unusual night, the thermometer registered well below freezing.

When morning dawned, the whole mountaintop was white with rime. A thick cloud blunketing the bare, rocky summit out visibility to a few yards.

Yet, out of sight below us, all New England was basking under a bot summer sun shining in a bright-blue sky. Mount Washington was merely throwing one of its frequent tantrums.

Mountain Papornma Unfolds

Then suddenly its anger melted. Holes opened in the cloud, sunlight poured through, the rime began to thaw, and far away to the southeast we could see the Atlantic Ocean gleaming off the distant coast of Maine.

All around us, as the cloud continued to lift, unfolded the splendid panorama of New England's mountains.

Nearest rose the stupendous, hulking shoulders of the Fresidential Range, bare and gray like the backs of gigantic elephants: Beyond, in all directions, the other peaks and ridges of the White Mountains rolled away in wave on wave, spilling over New Hampshire's eastern border into Maine (pages 566-7).*

Still further to the west rose the softer ranges of Vermont's Green Mountains, like parallel furrows in a giant's plowed field.

Barely visible on the western horizon were the sharp cones of some of New York's Adirondacks, 130 miles away.

Through five States New England's mountains thrust up a rocky backbone 500 miles long (map, p. 569). This ridgepole of Yankeeland runs from the gentle wooded ridges of western Connecticut and Massachusetts north through the entire length of Vermont, turns off across northern New Hampshire, and ends with the stark, lonely monolith of Mount Katahdin, jutting up out of the vast rolling wilderness of central Maine (pages 508-9).

Vermont Was Independent Nation

Colorful past and busy present vie for the spotlight in this far-flung mountain world.

Here, though few Americans realize it, the State of Vermont flourished as an independent nation for 14 years, complete with its own coinage, postal system, and army, before its admission to the Union in 1791.† If necessary to defend this independence, wrote doughty old Ethan Allen, "I will retire with hardy Green Mountains Boys to the desolate Caverns of the Mountains, and from there wage war with Human nature at large!"

Through these mountains raiding Indians dragged off half-frozen captives to Canada in the dead of winter; here debt-harassed veterans of Washington's army staged Shays' Rebellion; here in the roaring days of Maine's lumber boom, in the early 1800's, one man bought a million acres of virgin pine and

"See "From Notch to Notch in the White Mountains," by Leonard C. Roy, Narrowat Geographic Magazine, July, 1957.

*See "Green Mountain State," by Herbert Corey, National Geographic Magazine, March, 1927



spruce for only a few cents an acre. Lumber burons built up great fortunes.

Many New England pioneers backed out farms high on the hill slopes. When the thin, rocky soil failed to support their big families, the surplus lays and girls left home to help settle the Middle and Far West.

Today rich dairy berds graze on these hill farms, from which vast quantities of milk flow daily by tank truck and railway to Boston, New York, and other cities of the Northeast. Vermont alone, which has more cattle than people, exports to other States 85 percent of its total milk production, which approaches two million quarts a day.

Bustling quarries and stone-cutting plants make the area around Barre, Vermont, the "Grante Center of the World." Maine's forests turn out enough newsprint paper every day to make a two-foot-wide strip around the earth.

In these busy mountains people do everything from running skiing schools and selling antiques to carving marble and making maple sugar. And all this highland region is a year-round mecca for hundreds of thousands of vacationists, skiers, bikers, campers, fishermen, and hunters from the crowded cities of the Northeast. Two national forests, in New Hampshire and Vermont, help preserve timber, water resources, wildlife, and natural beauty.

For Older than Rockies

When westerners brag about the greater heights of their Rockies. Yankees remind them that New England's mountains are older by many millions of years, and originally probably towered as high as the present-day Alps. Mount Washington, only 396 feet lower than North Carolina's Mount Mitchell, still is one of the highest peaks east of the Mississippi.

Only an hour's drive from teeming New York City, Connecticut has 500 miles of marked hiking trails. Here the 2,000-mile Appalachian Trail enters New England's mountains and winds across them all the way to Mount Katahdin in Maine.

Iron mines once flourished in the Connecticut and Mussachusetts hills. Near Mount Riga, Connecticut, is the shandoned smelter and ghost mining camp where tradition says nuchors of the frighte USS Constitution were lorged. An arsenal near by made cannon, cannon balls, and shells for the Revolutionary Army. Today these mines are dead, but thrifty Yankees still get cash out of some of them by selling the old slag heaps as raw material for modern rock-wool insulation.

Northward the Connecticut highlands merge into Massachusetts' Berkshires, of which the highest is bare-topped Greylock, 3,491 feet, named for the snowy crest it wears in winter (page 571).

A graceful 105-foot granite tower on the summit honors the Buy State's dead of all wars, and from its top shines a memorial beaton visible for 70 miles on a clear night. When birds are migrating in spring and fall, the light is thoughtfully turned off to avoid confusing the traveling flocks.

On Greylock at evening may be heard the thin, wiry notes of rare Bicknell's thrush. This is believed to be its only breeding place in the entire State.

Hossac Tunnel Epic of Railroading

Through the rocky core of near-by Hoosac Range bores the Boston and Maine Rail-road's Hoosac Tunnel, considered a wonder of the age when it was constructed, and even today the third longest in the United States. In 1851 bold engineers, seeking to give Boston a railroad link to the West without climbing over the Berkshires, started digging the 434-mile tube with the only tools then available—pickaves, band-driven drills, and black powder.

It took 24 years to finish the job, and 195 men lost their lives in explosions, by drowning in subterranean floods, by falls of heavy timbers, and in other accidents. When a man was killed, other workers on the shift would quit for good, and new laborers would have to be recruited.

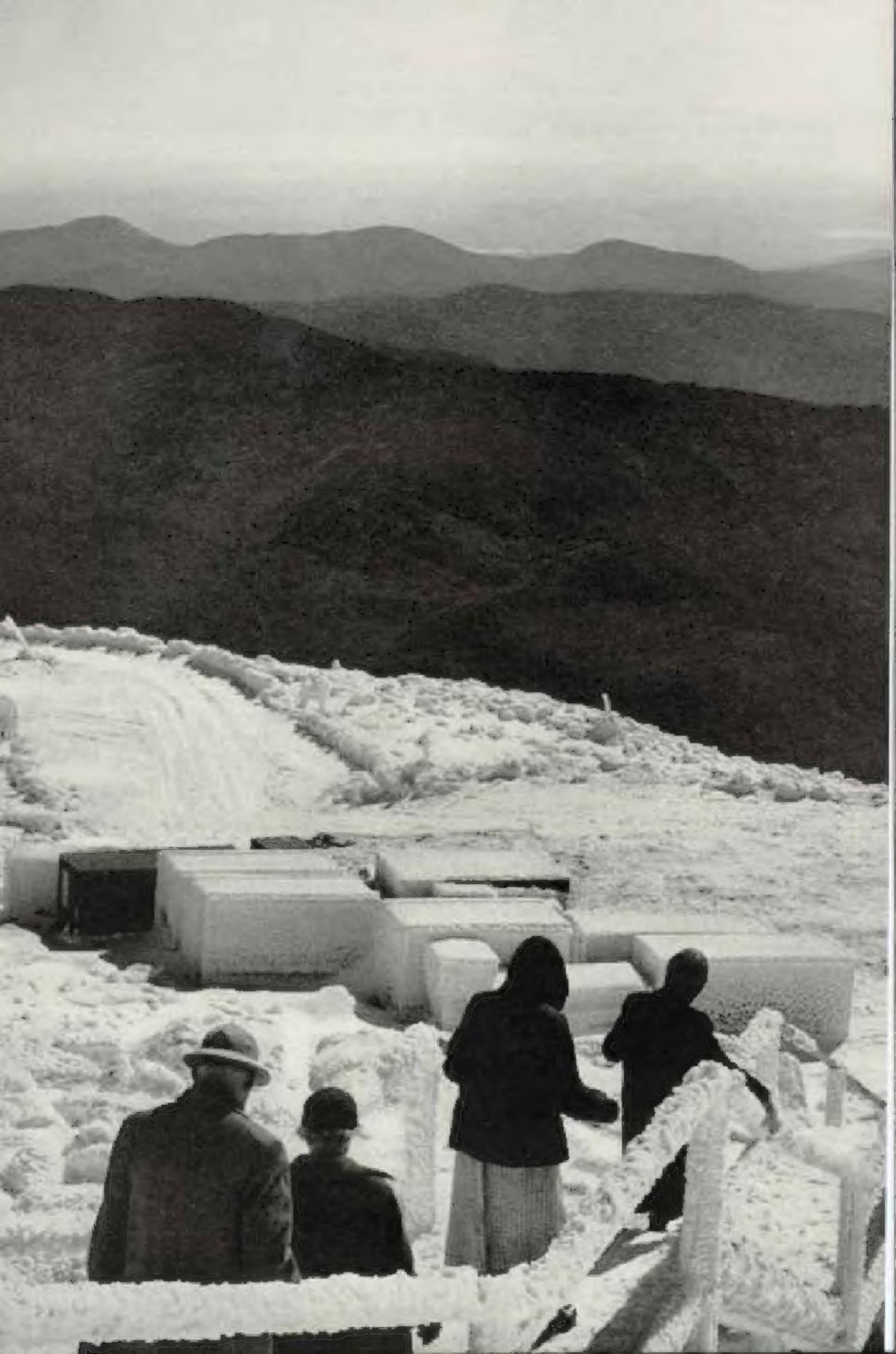
While a 1,000-foot ventilation shaft was being sunk, are destroyed a storage platform, dropping a deadly hall of heavy steel drills, hammers, and chisels that killed 13 men working 583 feet below.

In 1866 power drills and nitroglycerine were introduced for the first time on a large scale in America. They sped construction, but not until February 9, 1875, did the first locumotive puff through from end to end.

First great railroad tunnel built in this country, the Hoosac was the longest in the United States until 1928, when the Moffat Tunnel in Colorado, 5.2 miles long, was completed. The Cascade Tunnel in Washington, 7.8 miles, is now America's longest.

Cradled in the loftiest part of the Berkshires, in the extreme northwest corner of Massachusetts, is proud old Williams College, founded in 1793 on what then was almost the

* See "Skyline Trail from Mains to Georgia," by Andrew H. Brown, National Geographic Magazine, August, 1949.





Mountain Ranges Roll to the Horizon: the Panorama from Mount Washington

With exceptional visibility, the view from Vankeeland's apex extends about 130 miles. To the west, one may look across Vermont and Lake Champlain to New York's Adirondarks. The view north carries into Canada. Atlantic's flushing lighthouses and the lights of Portland, Maine, may be seen to the southeast. The southerly view reveals the Isles of Shouls off New Hampshire's coast (map. page 569).

Here, on an average day, Washington looks some 50 miles eastsoutheast into Maine. In the foreground, Wildent Mountain drops into shadowy Plukham Notch. Tuckerman Ravine, on the immediate right, is famous for its late spring skling.

Black Mountain occupies the second horizontal ridge. The third ridge shows (left to right) South Baldince, Sable Mountain, Kezar Lake, Chandler Mountain, and Kezar Pond. The long bulk of Pleasant Mountain rises in the distance, and just above its top Sebago Lake appears as a narrow white streak.

It is late September, and a 5-lach snow blankets the mountaintop. These visitors, having inspected the cog-railway terminal, descend to their station wagon (pages 565, 583, 592, 593, 594), They will drive down the carriage road (left).

Snow-encrusted crates contained jet-aircraft engines which the Air Force and Navy tested under Washington's worst icing conditions.

frontier, with money left by Col. Ephralm Williams, killed in the French and Indian War. Wooded slopes climbing high all around the lovely tree-shaded campus show why Williams's favorite song is "The Mountains":

O proudly one the manarchs of our moun-

With their kingly forest to be to the sky . . .

The mountained the mountained we greet them with a song

Whose echoes, rehounding their woodland heights along . . .

It was a Williams professor of 100 years ago who inspired that famous saying, "The ideal college is Mark Hopkins on one end of a log and a student on the other." Professor Hopkins, later president of Williams, helped develop the ideal of liberal education fostered to this day in most small New England colleges—close contact between teacher and student, free discussion, and independent thinking (page 585).

Birthplace of American Foreign Missions.

In 1806, on this then-remote mountain campus, was born another ideal with world-wide influence, the American Protestant foreign missions movement. During a thunderstorm one afternoon, five Williams students took refuge under a haystack, and their conversation there inspired them all to piedge their lives to foreign missionary work. Out of this grew the present-day North American Protestant foreign missions program, which in the year before the Korean war resulted in the expenditure of over \$54,000,000 to support the work of 15,500 Americans and Canadians overseas and 76,000 native workers.

In 1801 a Yankee named Zenas Crane set up a mill in the Berkshires to make paper from the rags he collected from country housewives.

Today, whether you carry \$1 or \$1000 bills in your wallet, they're all engraved on special paper made in Dalton, Massachusetts, by the fifth generation of Zenas Crane's descendants. In the past 100 years Crane's has made paper for bank notes and securities of countries occupying more than half the globe.

Changing Styles in Stationery

Uncle Sam's currency paper is produced by a secret process in Crane's "government mill," from which armed guards exclude all visitors. Half linen and half cotton, it is the most durable paper that can be used for currency and is impregnated with fine red and blue silk threads that make it difficult to counterfeit.

Paper for stock certificates, bonds, insurance policies, deeds, note paper, wedding invitations, and the like also is made by Crane's.

"Styles vary in stationery, as in clothes," Winthrop Crane 3rd told me, "For Instance, the black-hordered papers once used by people in mourning are going out of fashion, but wedding forms have not changed for several generations.

"People in the Southwest generally buy more brightly colored note papers than easterners, who stick to whites and muted shades. The westerners, we think, are perhaps unconsciously influenced by the stronger coloring of

their scenery,"

Across the Berkshires today can still be traced the "Great Road" over which, in January, 1776, toiled a long train of ox-drawn sleds loaded with more than 50 cannon captured at Fort Ticonderoga on Lake Champlain. Col. Heavy Knox and his Continental artillerymen dragged these guns all the way to Boston, mounted them on near-by Dorchester Heights, and thus forced Lord Howe's British garrison to evacuate the city.

In 1777, after Burgoyne's surrender at Saratoga, forform files of Hessian prisoners were marched over this same mountain truck. Along its route today, among the quiet forest-clad hills, stone walls, and rocky farms, one can almost bear again the hearse shouts of Colonel Knox's ox drivers, the creak of sled runners under the weight of the cannon, the shuffle of

marching prisoners' feet.

Artificial Lightning Aids Research

In bustling modern Pittsheld, near by, I stood on a balcony in the General Electric Company's "high voltage hall" and watched a 50-foot bolt of artificial lightning, largest ever created by man, flash and crash between two huge impulse generators (page 589).

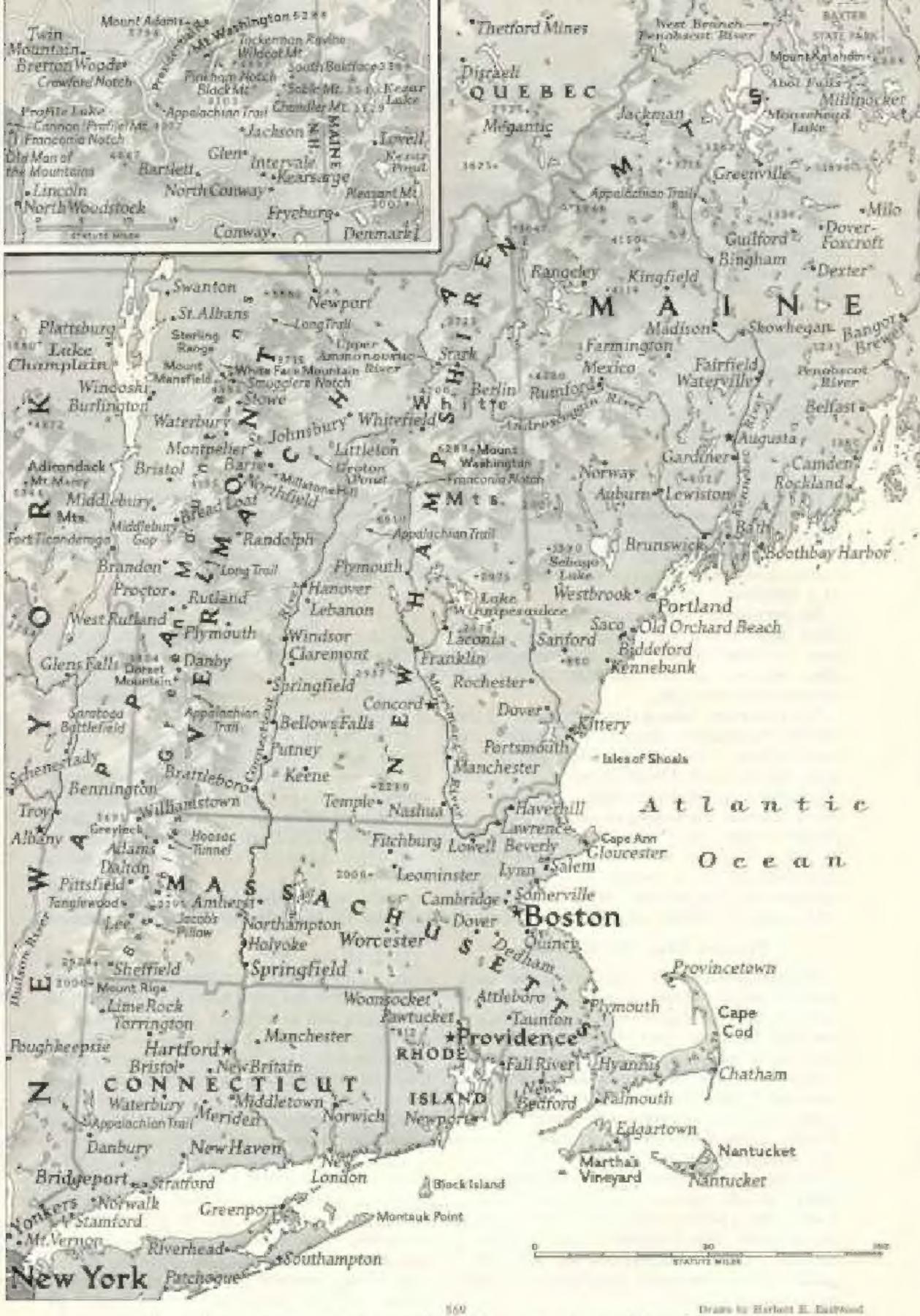
Scientists use this 15-million-volt "manmade lightning" to learn better how to protect electric power transmission lines and power plants from damage by natural lightning

bolts.

General Electric also runs, in Pittsheld, the world's largest electrical transformer plant. Millions of transformers made here are working in electrical systems all over the world.

Nowhere is there anything quite like the annual Berkshire Music Festival, which in 1950 drew 170,000 music lovers and musicians to the Berkshire Hills. At Tanglewood, the lovely 210-acre estate where Nathaniel Flaw-thorne entertained children with Tanglewood Tales, the Boston Symphony Orchestra conducts its yearly Music Center, playing a series of superb concerts and operating a world-famous summer school of music.

* See "Lightning In Action," by F. Barrows Colton, National Geometric: Managing, June, 1980.



It seemed like circus day when I went to a concert one perfect July afternoon, with the fumiliar smell of trampled grass, long lines of people buying frankfurters and soft drinks, the sense of excitement in the air.

In the huge Music Shed, shaped like a piece of pie, open on all sides, the 6,000 seats were filling fast. On the stage the 104-piece Boston

Symphony Orchestra was tuning up,

Overflow Audience Sits on Grass

Outside on the grass were jammed 8,000 more people clad in sun suits, sun dresses, slacks, and shorts, reclining on blankets, sitting on camp stools or newspapers, munching picnic lunches, knitting, playing cards, and holding hands.

A brass accompative bell clanged; then guest conductor Serge Koussevitzky strode to the podium amid a thunder of applause and raised his baton. Instantly every sound was husbed. Down came the baton, and the great orchestra crashed into the opening cadences

of a Brethoven overture.

So perfect are the acoustics of the Music Shed that far out beyond the fringes of the vast overflow crowd every note sounded as clear and true as if I had been sitting well

forward near the stage.

Next morning George Judd, manager of the Boston Symphony, showed me around the music school. Under a spreading oak on the green lawn a lovely blonde sat on a cump chair practicing on a big golden harp. In a secluded shack down in the woods an earnest trombone player blatted away where he would disturb no one. A student orchestra practiced a concerta written by a student composer, while Koussevitzky paced the nisles and listened with a now approving, now pained, expression.

Dancers Most Be Athletes

Yankee farmers who once tilled the stony acres of Jacob's Pillow, not far from Tanglewood, would be amazed at the cavortings of the lithe, muscular men and women who now leap, twirl, and pirauette there every summer.

Here for three months students from all over the United States and abroad come to study at the nonprofit University of the Dance, directed by Ted Shawn, noted Amer-

ican dancer (page 576),

In the little theater where students stage dance recitals approaching Broadway's best, I saw them perform with faultless grace that classic ballet, Les Swiphides. Not only did 1 become a dance enthusiast on the spot, but I guined a new respect for the physique it takes to be a dancer.

"Commando training is a cinch compared

with the workouts these people get," a staff member told me,

"Their day starts with one hour of body conditioning, the most rigorous calisthenics ever devised. Then comes an hour and a balf of practice in classical ballet, followed by an equal period of modern dancing. After funch there is a session in ethnologic, or folk, dancing. And on evenings when there's no recital in the theater, there are two hours of compulsory rehearsal of the day's work! By that time everybody's ready to hit the hay in 'bailet alley,' our dormitory!"

Director Ted Shawn, who at 59 still walks with the light-footed grace of a track athlete and dances in many of the recitals, told me:

"Our institution is unique in the world in offering a completely sounded course in all phases of the dance. Here we teach ballet, folk, modern, and classical dancing: the relation of the dance to music, and to dramathat is, the use of the human body as an instrument of emotional expression."

Coolidge Birthplace a Shrine

In sharp contrast with the busy Berkshires is tluy Plymouth, birthplace of Calvin Coolidge, almost lost among Vermont's Green Mountains but still sought out by thousands of reverent visitors.

Miss Aurora Pierce, the Coolidge housekeeper, spry despite her 80-odd years, showed me the room in the modest old homestead where the Yankee President was administered the outh of office by his father before dawn on August 3, 1923, after Harding's death.

"Did you know Mr. Coolidge well?" I asked

her.

"Nobody knew him really well. He didn't talk much. But when he did, you understood

Mrs. Herman Pelkey, who runs the village store, told me how President Coolidge would sit and watch the local boys pitch horseshoes all evening and never say a word. She showed me the little room in the rear of the store where he was born, and where he and Mrs. Coolidge once hid to play a joke on the Secret Service men.

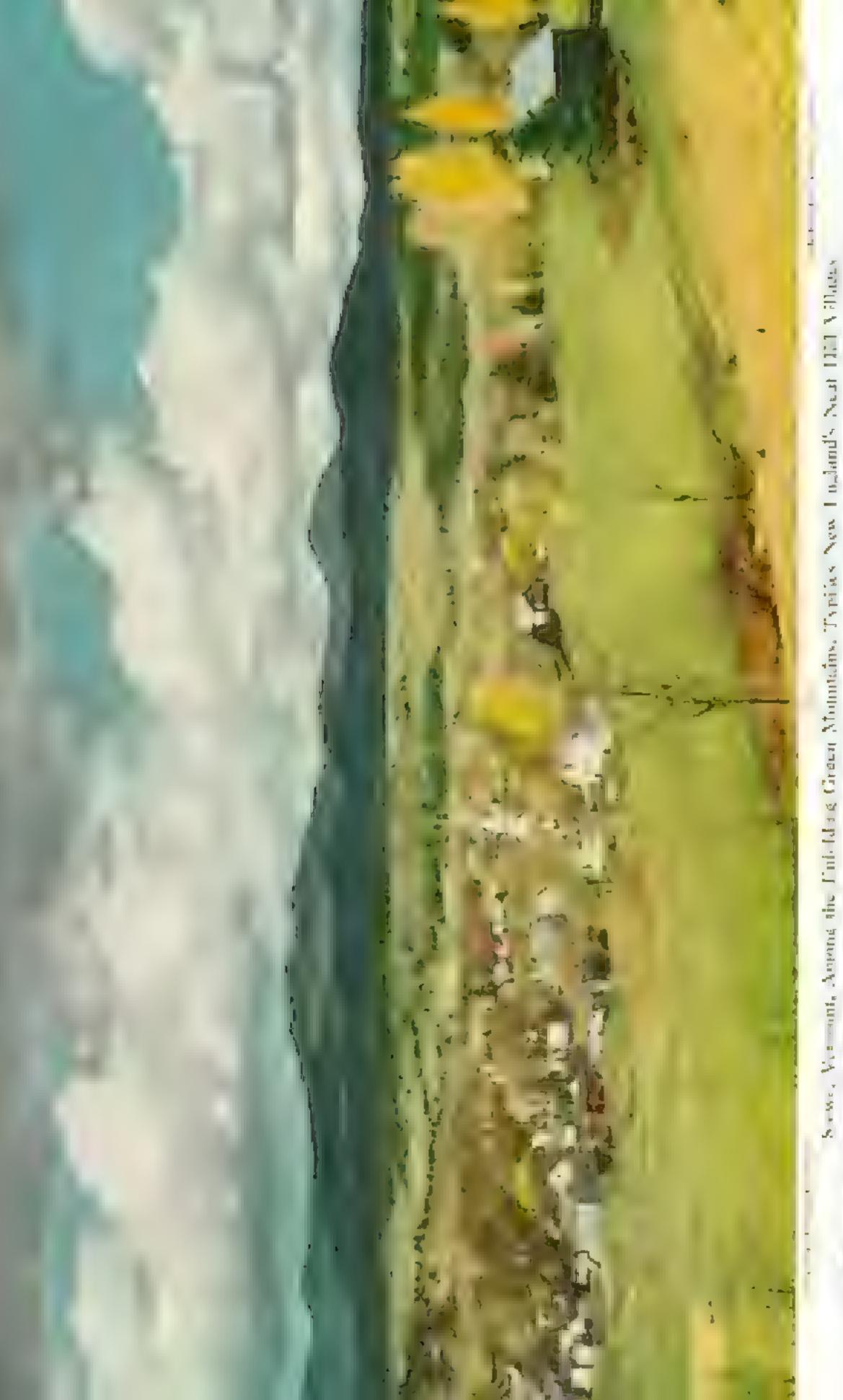
Strange creatures once roamed Vermont's mountains, some people will tell you.

Years ago my father and uncle went to their camp on Groton Pond, in the heart of a lonely mountain wilderness, and took along Joe Leblanc, a French Canadian, to thop firewood. Returning from fishing, they found Joe had disappeared, leaving his coat, hat, and ax,

He finally turned up at a near-by sawmill village with a wild look in his eyes. In the woods, he said, he had seen the awful



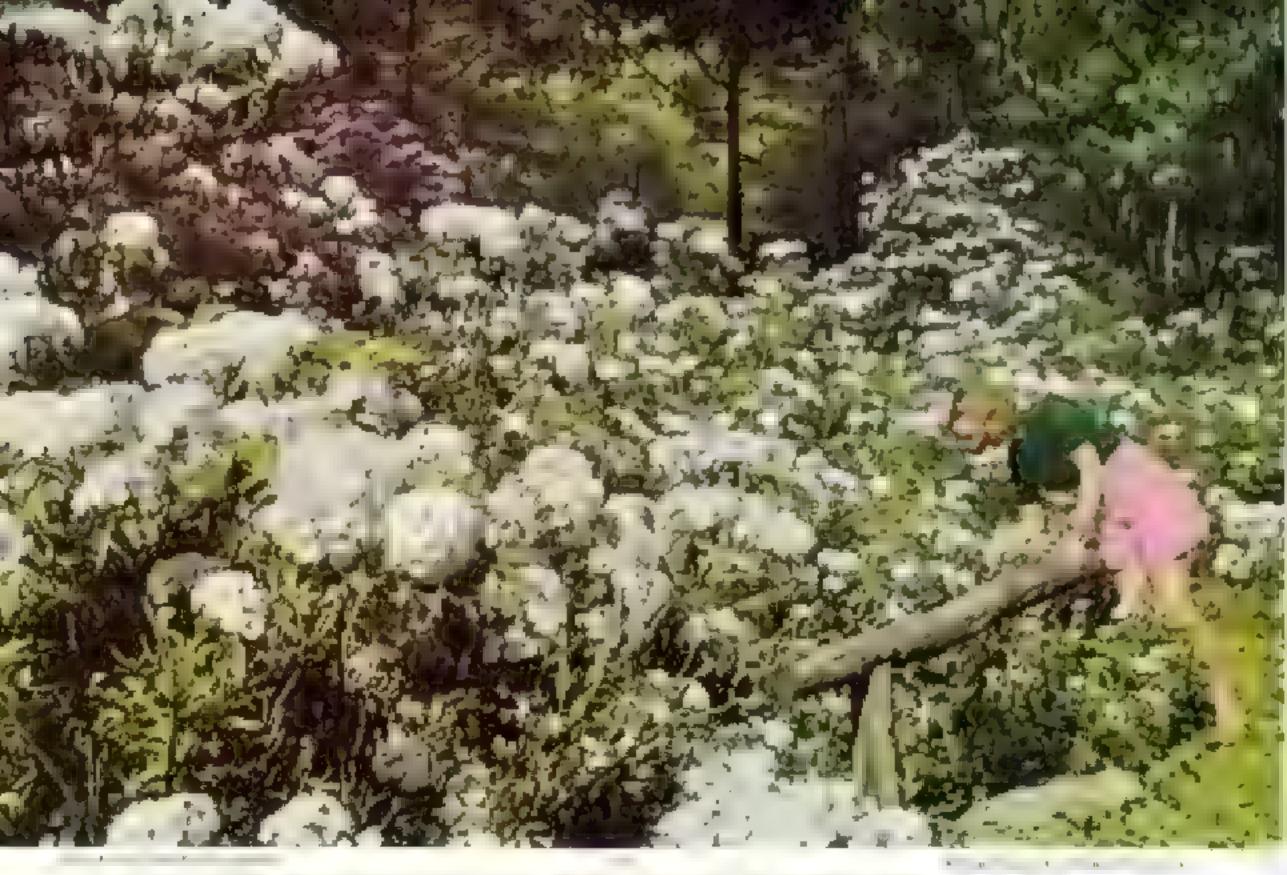
Povement-tired Feet Escape on New England's Trails; Cares Vanish in the Mountains
This is 3.491-foot Greylock, loftlest of the Berkshires. Worn down by age, it is a dwarf compared with the younger
Rockies. Here scientists, seeding clouds with dry ice, produced the first man-made snowsterm in 1946.



Short and States are from the an interest of the first of the last of the first of

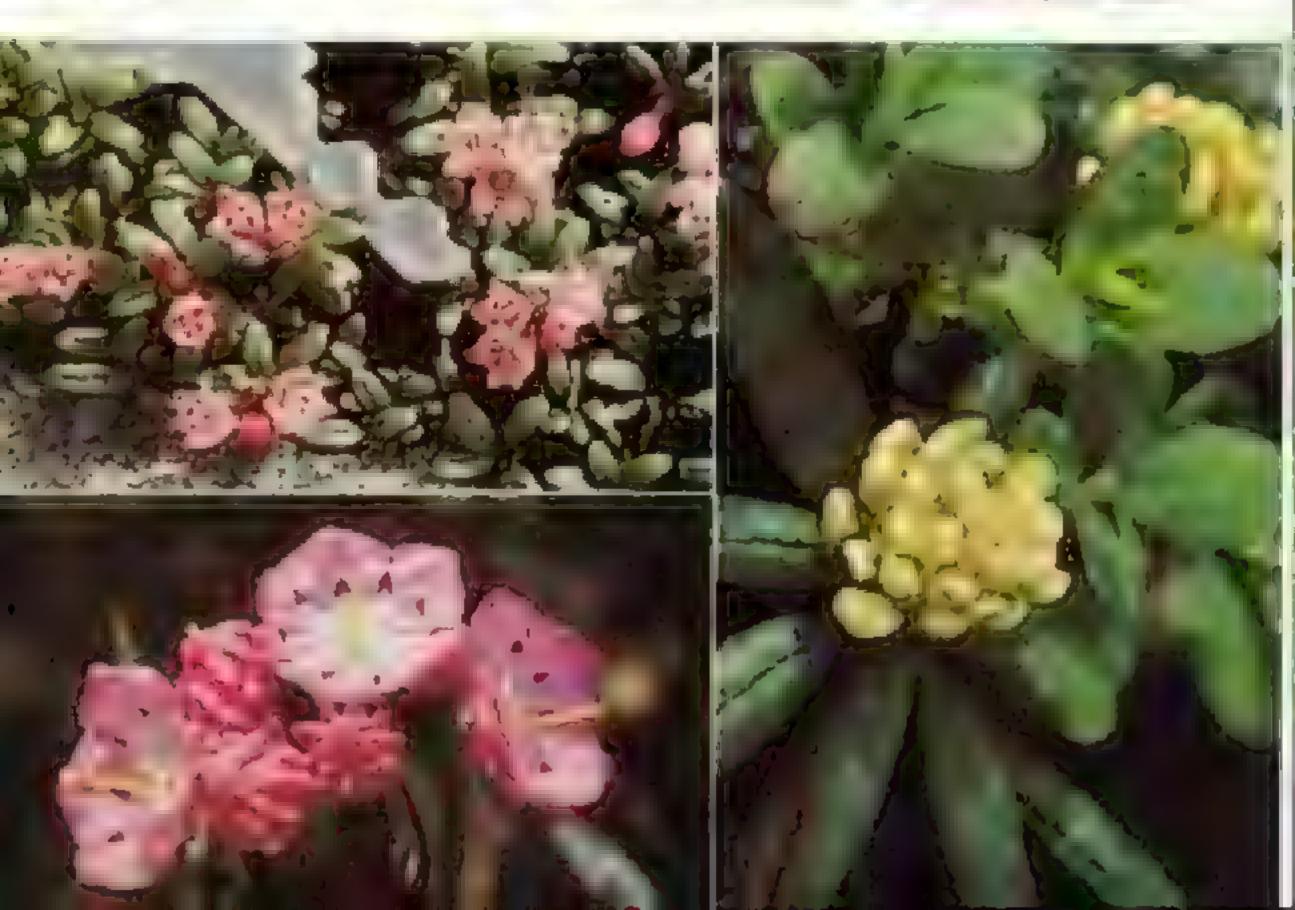


Parting Hovers Sean Mount Mansheld's Craggy Summit, Jatung 4,393 Leer 10to Vermont Sky

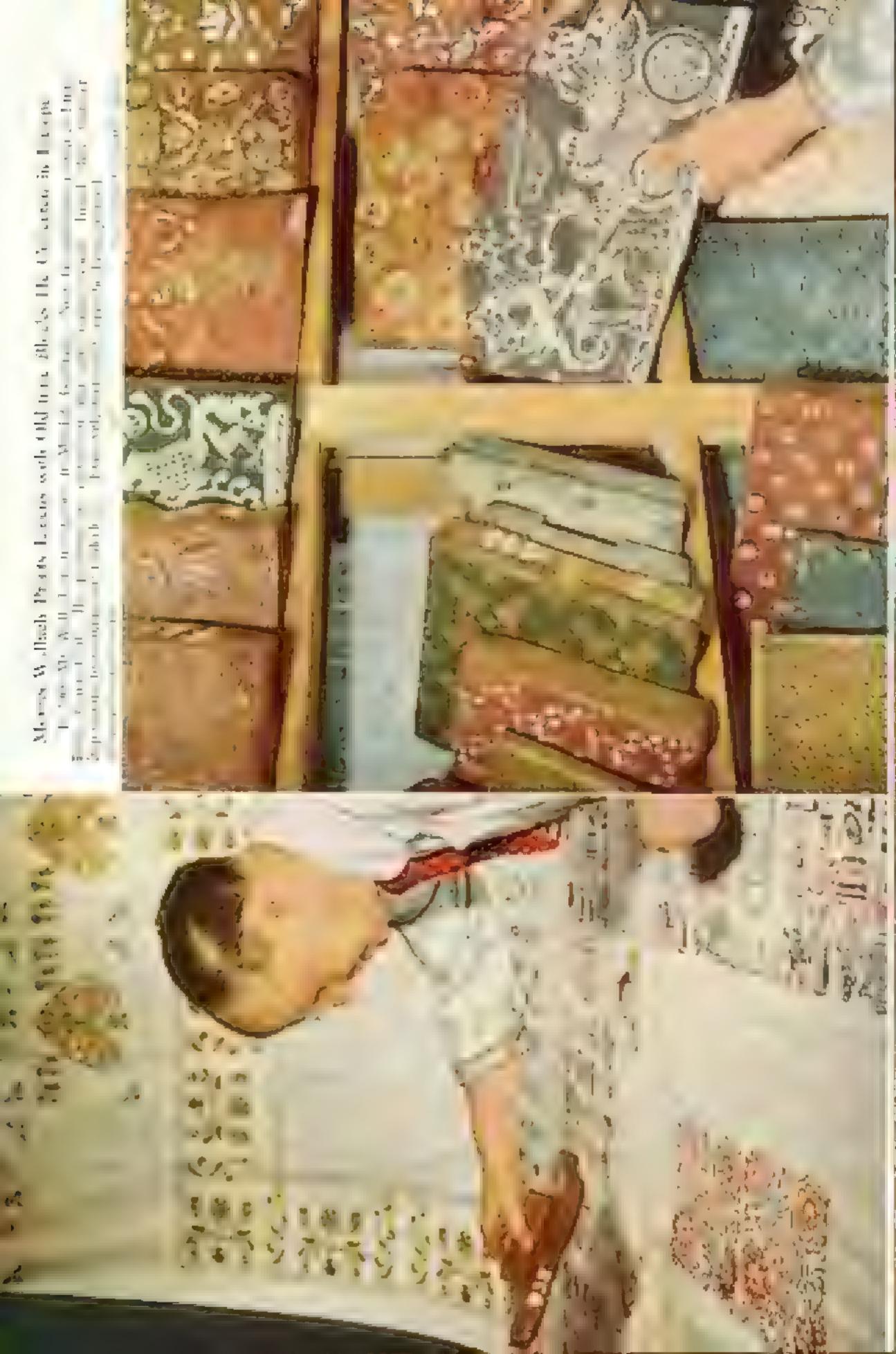


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temp-gorou, and had got out of there fast, breach Canadian legends say the loap-garants a kind of werewelf, a man who has been througed into a wolf or other naimal as a puntable of against garahot, knife, or as unless the weapon has been blessed. Nothogy has seen a loup-garou in Vermont since that time Joe did.

Mount Mansfield, Top of Vermont

From the bare granite core of Mount Mansfield, 4,393 feet above the sea, highest peak in Vermont, the blue-green summits and ridges of the Green Mountains are visible north to Canada and south ha fware to the Massachusetts has (page 574).

Only the great "decader-dec" of a kine chickaries and the gentle whisper of the wind make the silence as I sat on a rock on the summit, munched sweet wild blueberries, and watched black shadows of moving clouds parade up the great slopes of the next rulge.

Almost under my feet gigantle zock precipices planged down into the deep, narrow gash of Sungglers North, as if a giant's at had made a stependtus cut deep into the mountains (page 572). Through this wild deble, tradition says, sangglers spirited cattle to Canada during the War of 1812

To the west general the 100-mile-long expanse of Lake Champlain, historic pathway of French explorers and invasion route of British sunles and theets moving south from Canada in the Revolution and War of 1812.

bor nearly 100 years a tiny frame instel has perched on Mansheld's summit ridge, parts of it hardly changed from 1858 when hosp-skirted female greats role up to it sidesant le on horsesack. Today cars can drive to the top of the measurain over a good toll mad

On the botel parch I met my old friend Ed Chapin, Smathsoman Institution entomologist, or the continuous with the happy light of the bug todes for In his eyes. He showed me a glass jur full of grasshoppers. "They're a sub-Arctic wingless variety." he sa'd, "found this far south only on the higher mountains where it stays cool even in summer."

"Long Trail" Pollows Highest Ridges

Down over the steep 1,000-foot drop of Mansheld's southern spur I climbed and slid on the route of the Long Trail, a spectacular hiking path 201 nules long that traverses the entire length of Vermont, stuying in the willerness of the highest mountain ridges all the way

I brough miniature spraces growing amiritree skeletons lett by an old forest fire the trail led down over bore ledges where cairns, or rock pales, marked the way. A bank secred silently above the shoulder of the mountain. Below, the trail led among clusters of enormous builders strewn belter-skelter down the slope, through tunnels formed by piles of rocks, down rocks ladders and past caves.

Puring up the trail under heavy packs came three high school boys from Dedham, Massachusetts, out to hake the entire length of the Long Trail from Massachusetts to Canara.

* Any excitement so for?" I asked,

"Well, a purcuping climbed in hed with us one night in one of the open shelters, probably backing for salt." they said.

"Another night we had to sleep outdoors because the sheller was full of girls. That was

the only night, it's rained so for! "

Huntieds like on the Long Trail every year. A mail carrier once walked it from end to end on his viniation. Built and maintained by the Green Mountain Club, the trail has shelters spaced at intervals of a low miles, near drinking water and equipped with bunks and stoves

Skiint Down the Nose Dive

Winter now is Mount Manshelf's busiest season. Skiers by the thousands, from as far away as New York City, swarm in for week ends or longer stays at the hotels, lodges, and farmhouses at the base of the mountain. On the highest and longest single-link chair left to the East they rule in 12 minutes to the top of the mountain, then swoop down the steep Nuse Line Teall or glade more letaurely down the force for much for the force with a steep the force of the auto road.

On a tright, hitter-oud day I watched hundreds of colorially clad skiers of all ages some tway up the mountain in the chair lift, which tack down an one of the many trails leading out of the woods, skid to a balt in a cloud of swiring snow, then stop in to warm before the shifter's big open fite or have a cop of

I though only two or three of every 1,000 skiets receive injuries requiring medical attention, Mansheld's of icient Ski Patrol carefully supervises the safety of all. Unsafe spots are marked with flags and entire trails are blocked off by the Patrol if they become dangerous.

On the mountain slopes, in summer, you see stoot wooden boxes elevated high on state to keep them from being turied in the win et snow. In them the Patrol keeps tologgens, birst-aid equipment, and telephones. Injured skiers are harded down the mountain on the tologgens, and a Sei Patrol member is the last man down in the evening on every ski trail.

* See "New England 5ki Trade," to Daniel Rochford. National Geographic Managers, November, 11 (



Ginz San, Shaping Sharpening Stores, Cars Hard Rock into Breadline Silver

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25 Toms a Ciramite Dramsatically Rise from the Ibbs in Depths of Rock I Ages Quarty the 40-time pit is that Batte, beamont, "Grande Center of the World" Derneks, beneath so is a large of the foreign first 115 feet ong und 3 feet that. Pipes carry compressed are to drike two in party is a



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From August to October, when form work

permits, his 300 pickers, all local men, wencen, and children, some the near-by mountain-sides for "Unt Fancy" ferms, known to bota-

vists as Dryapteris intermedia,

Crossing the mountains through wild Middlebury Gap where virgin forests stall cloak some slopes. I visited the world-fam has Bread Loaf School of English operated each summer by Middlebury College in the quiet and sectusion of this remote bill country.

Old English Ballada Preserved

A specialty at Bread Loaf, director Reginald Cook told me, is the study and preservation of old bullads, some traceable as much as 500 years back in old England, which have been hanned down by word of mouth for generations in the mountains of New England. Typical is "Lord Thomas and Fair Eleanor," known in the days of King Charles II.

Lord Thomas, he was a noble lord, The keeper of King's deer hair Eleanor, she was a lady most bright, Lord Thomas he loved her dear

"Advise us both, that mather," he says.

'Advise us both as one
Hall best marry Fair Flan, my dear,
Or bring the lim we Girl home?"

"The Brown God she has he uses and land," hair Flemor, she has more. Therefore I charge you with my here care. To brong the Brown God home.

Highest and touchest of New England's peaks are the bare and rugged White Mann-tans, massed in a Eight cluster in New Hampshire's northern half. Highest and roughest of them all is mighty Mount Washington, named for America's first President (pages 560-7, 503).

Wintering on Mount Washington

A gast of wind with the highest velocity ever measured on the earth's surface, 231 m lesper news Mount Washington's support on April 12, 1934. Twenty-five mend women have perished trying to climb the lood for strewn dome in laid weather, victims of insufficient physical stamina or exposure; yet, when the weather smales, one can walk up and down it in a day

Leading into a 60-mile-an-hour August gale, I visited the summit weather station where a latedy crew of young men stay all the year round. Their reports, broadcast daily from the magnificate, are used in forecasting weather for all New England and for reporting

skiling conditions (page 594).

Bolted to the rocks, the weather station is one of the world's strongest buildings. Its windows are double-paned and covered with fitte wire mesh to protect them from flying chanks of ice. An oil harner supplies plentiful next in winter, in a nevertheless, snow sometimes stits through the wincow cracks and above on the sills for days without melting

Coldest winter day we've ever recorded was 46 5 degrees below zero," Harry Temple, chief observer, told me, "It's never been over 44 above in winter or over 71 even in sammer. On very cold days we have to wear face masks outside, and when the wind gets up to 100 miles per bour, it's impossible to stand upright

"Our weather up here is as sewre as any in the world, worse than the storms in the Rockies and the blizzards on the Great Plains. In winter we get harricane-velocity winds on

two out of every three days."

On the wall I spotted a membership certificate in the National Geographic Society issued in Temple's name. "A fellow gave me the membership after he got lost on the mountain and I found him," he explained

leing Tests for Jet Engines.

Bad winter weather on Mount Washington has one good side. It provides a ready-made laboratory for studying that perennial head-ache of all aviators—formation of ice on planes in flight

A scientist of the Air Force detachment at the Joint U.S. Air Force-Navy research station or the mountain explained the pro-

gram to me,

"Here on Mount Washington we get natural icing conditions frequently, better than we can produce in a wind turned or happenently. We set up scale models of wings, propellers, and other ninerall parts, watch how ice forms on them, and try out anti-iring devices, such as heating the leading edges of wings.

"It ing affects the performance of jet engues, too, and we're testing various types of jets up here to see how they perform under

wing conditions."

When Sylvester Marsh, a New Hampshire lay who had made his fortune in the West, climbed Mount Washington in 1858, he puffed, "This isn't the way we do thous in Chicago," and started planning a railroad to the top. People stoffed, and a member of the legislature suggested Marsh's franchise be amended to permit him to build a tailroad to the moun!

Marsh ces gued a narrow-gauge track with a slatted rai, in the center, into which meshed the nerth of a cogwheel turned by a steam becomotive. It worked, and one-car trains

* See "New Humpshire, the Country State," by George Huggin Moses, Natureal Greensantie Marie Marie and September, 1931.

pushed by snorting battle engines have been carrying passengers up and down the mount

tain ever since 1809 (page 592).

Reportmen used to inspect the track by crassing down it on a "sili dwerd," made to fit wer the cognil flanges and equipped with hand brakes. One man slid the three miks ir 2 minutes and 45 seconds). In 1861 a carringe road was pushed through to the sumfall and is now a toll read for ant and

In whiter some 25,000 skeers come to try and the slopes of Tuckerman Ravine and its tancons bradwall on Mount Washington, where the downlill grade starts on a 50-degree slope. Some amateurs "freeze" with fear when they first lank down from its top. Ruslrst sking season is from mid-March to tail May, when the snow is gone or diminishing elsewhere in New England but lingers in the taxine, where the sun hardly penetrates,

Gazing out from the top of the gigantic cliffs on the east side of Profile Mountain clocally, Cannon Mountain; pages 382, 588, 595) with an expression ball benign, half stern. is the inmous Old Man of the Mountains.

Great fractures in the call face began the formation of the Old Man as much as 200 million years ago. Frust notion broke off hig blocks in such a way that the remaining ledges form the "Great Stone Face" when grewed from the shore of Prorie Lake, some 1,200 feet below.

Three Miles of Pulpwood

Draving aborgsule the Andrescoggin River north of Berlin, New Hampshire (page \$64), I saw a mass of feur-foot pulpwood logs filling the stream from hark to bank for three sold miles. They were stored for future use by the Brown Company, pulp and paper manufacturers, which owns 4,800 square miles of forest land in northern New Hampshire, Maine, and Canada, an area almost as large as Course in at

In oh, times the men who logged these woods lived in rough log houses, sleeping side ay aide in une long straw-filled bank. Bathing was rare. Hearts, sait pirk, molasses, and strong colice were the staple foods. Coming out of the woods in the spring, lamberfucks spirit their accumulated wages in one will

Spreet,

I visited a motiern model camp where the men live in neat portable houses with wellspaced double-deck from banks. There were hower boths, flush toilets, set tubs for washing clothes, electric lights radios, regular mail deliveries, and free newspapers and mapu-ZIDCS,

for manday dir er we had hig steaks,

potatues, onions, fresh n lis, and the lightest, flaciest cherry pie I ever tasted anywhere It's not ameand for one logger to consume an

entire pie!

Out of the enormality complicated muchines in the company's fuge will in Berlin come pulps and papers from which are made fine stationery, wedding announcement stock, onlonskin and carbon paper, cigarette papers, no transplace papers, playing cards, parchment, facial tissues, multiwaller bags for coment and chemicals, strong bags for polatoes coffee, tea, sugar, and floar. They make the base material for paper draperies, gummed scaling take, insulation paper for electric willing.

Oldest inclusary in all the White Mountains, founded in 1823, is the manufacture of milhours of sharpening at mes for hand use inputting edges on knives and tools. Out from the Norton Pike Company factory at Littleteat, New Hampshire, are shipped nearly all Latin America and for most of the knives used by rubber workers in the East Indies. Some stones are of natural rock; others are malled and fused in electors furnaces from malten stheon carbide and aluminum oxide (page

1066

For 100 years resort botels have been as much a part of the White Mountains as the peaks of the Presidential Range. Typical of the objet resorts is the juvations Mountain View House at Whitefield, operated for five generations by the Bodge family. Its members have built nine successively larger additions on the original old family farmboase, which still forms part of the lub iy,

The original Walsom F. Loalge g a late the botel business artidentally when a Boston-Montreal stageworth broke down near by thirlig a storm and some passengers from New Orleans sought shelter in his home. They iked the food and the magnificent view of the Presidential Range, came nature and brought their friends. Some families have been spendlag these into here for four generations.

Maine Makes Hardwood Gadgers

Where the White Mountains bulge over into western Maine they are less maged and are interspecsed with lakes, forming a popular vacution country in which are located 220 boys' and girls' summer camps

Here, and in Vermont as wel, busy wondworking factories turn the bardwood trees of the na untain slopes into the countries little wooden pudgets that bely keep clusteration Blox BR

Leo Melvium, superintendent of the H. G.



United States History Has Special Meaning at Williams, a College Monast as Old as the Nation

So we have he supplied to the supplied to the

Winter and Sons plant in Kingfiehl, showed me two machines that turn out 60,000 checkers and 22,000 tiny Venetian blind pudeys in a

single day

We make costume jewelry of wood, conted to have like pearl and glass," he told me. "Also salt and pepper shukers, lawn-nower tollers, pullcement's clubs, croquet balks, wheels, yo-yo tops pavels dollhouse-size fruit folding bed legs, serew-driver handles, and more other things than I can semember" (591).

Lp through parts of these mountains, too, woodsnen have found rusted axheads and cases of land bullets, relics of a neroic but little-known epic of the American Revolution, Benedict Acnolds trage many to Quenec.

Disasters Horass Expedition

In the fall of 1775 Arnold, at that time still a loyal and energetic other in the American Year, led about 1,000 men in bateaux up the Kennebec kneer to try to penetrate the nathern wilderness and capture the British

stronghold of Quebec by surprise,

Trouble began early. Water getting into the boats suined the biscuit, dried pess, and salt tish, liteavy rains flooded campsites, washed away equipment, and made a morass of the ground over which the troops struguled to carry their heavy boats at portages. Many man fell sick, some died, and some tiruts, becoming dishentened, turned book

With a remnant of only about 500 men. Arould mady reached Quebec and joined Gen. Richard Montgomery's force of 500 that had o me cown the St. Lawrence. They attacked, but were driven off and all the privations came

to notaing

Lake stretch the Ber Woods of Morsehead Lake stretch the Ber Woods of Major 1 and of the Lake Stretch the Ber Woods of Major 1 and of the Lake Stretch Laper, produced Ly the Great Northern Laper Company, largest makers of newsprint in the Laded States (page 591).

So extruste are its forest lands, covering more than a tenth of the State, that the company classifies timber with the aid of agrical photographs, on waich experts can identify the various kinds of trees.

Natulatin Rises from Wilderness.

Thrusting up out of the tenter of this wilderness stands the last great eastward bastion of New England's mountains, the solid gray rock mass of Mount Katahrlin. Only 12 test shart of a mile in height, Katahren rises almost alone out of country that is only about 800 feet above sea level, so that it appears more spectricular than any other New England (pages 508-9).

Katabilia stands in Baxter State Pack 141.712 acres of woodland given to the State by former Governor Percival Proctor Baxter to ensure preservation of the area in its wild state and for the protection of game, which abounds in this region

All around in the woods we saw tracks and signs of moose, bear, and deer. Driving back to tamp one night, photographer hob Sesson rounded a curve and almost run head on into a buil mouse standing in the mad. Just in line the more yielded the right of way.

"Some hikers used to went out the sents of their pants sliging down on the rougher trails on Katalidia," a Midne guide told me "They'd stay out in the woods and send in for blankets to west into camp! Once, for a joke, we sent a fellow a barrel!

"One woman biker wors so much gear that she got stack in the Needle's kive, where the trail goes through a parrow cleft of rock. She couldn't move forward or back, and had to wait all night until some people came along in the morning and pashed ber through."

kniže Edge Dangerous in High Wind

Hising me 1,000 feet above Katahdan's top, hill Targeon of the Maine Department of Inland Fisheries and Game pointed out the pear int fishbook shape of the mountain. For a tip had, the had received the mountain that the Ladians feared, Insace the beaut of the hook are three great basins, and from their floors stack granite cliffs rise 2 000 feet sheer to the rim above.

Note the top of the bend of the hook we could see the famous Knite ladge, so narrow a man can stand antide of it in many places, and dangerous in a high what, with precipitous slopes propping 1,500 feet on either side. This marrow radge leads up to Baxter Peak, Kntahdin's summit. Reyond is the broad four-mile Table Land, a comparatively level area on the top of the mountain.

As far as we could see in every direction, the lotter is tented a blanket of glorious antonia coloring, dotted with the shiping blue of instanceable loses and ponds, who h, as Henry David Thoreau once said, look like the fragments of a gigantic broken terror scattered for and wice.

Wordsworth worde: "Two voices are there; one is of the sea, one of the mountains, each a mighty boice."

.h New England the voice of the mountains is mighty indeed."

* but said fond articles on New England see 'Naturest the snapher Manager Complaint Index 12 49-1-10"

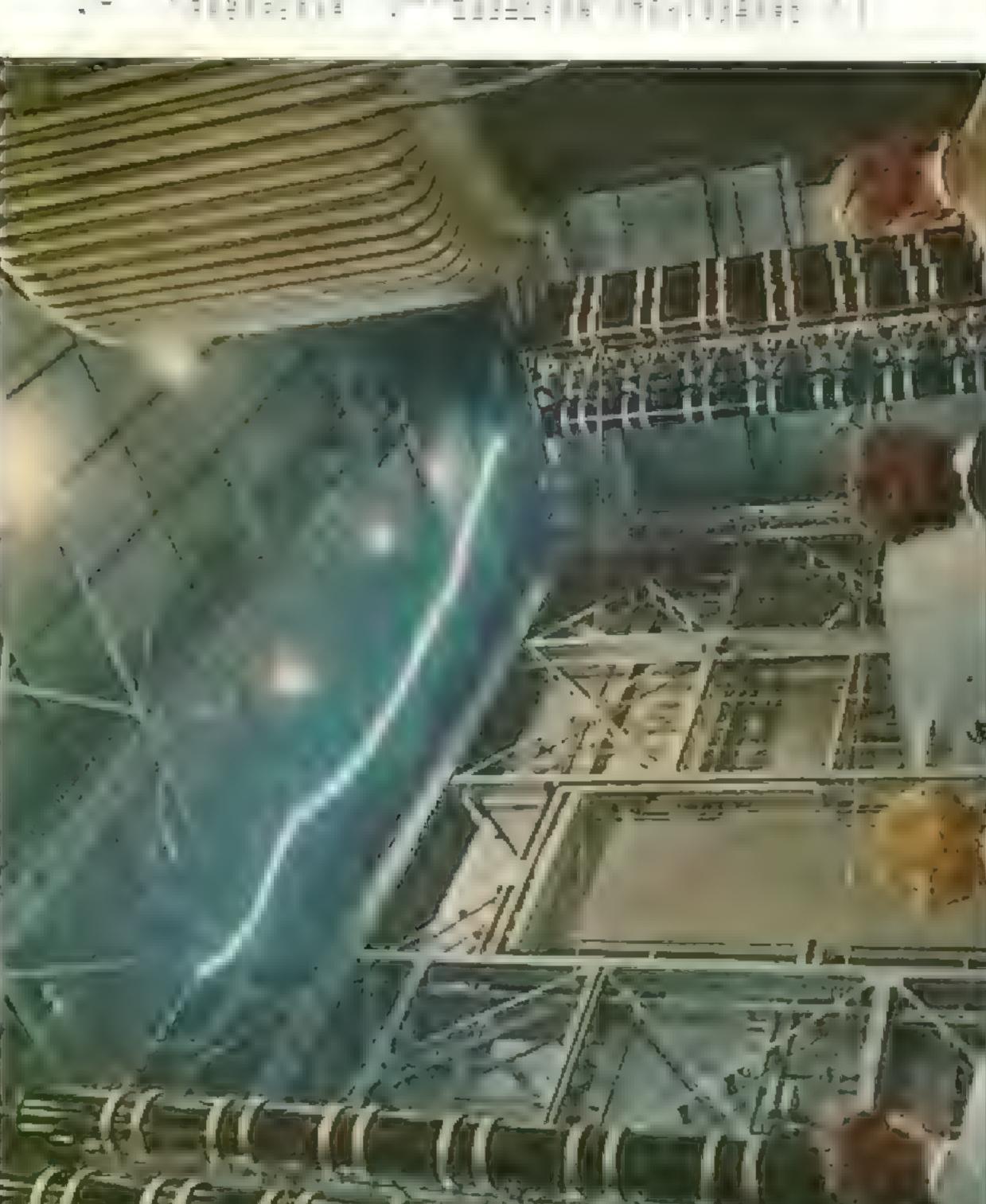


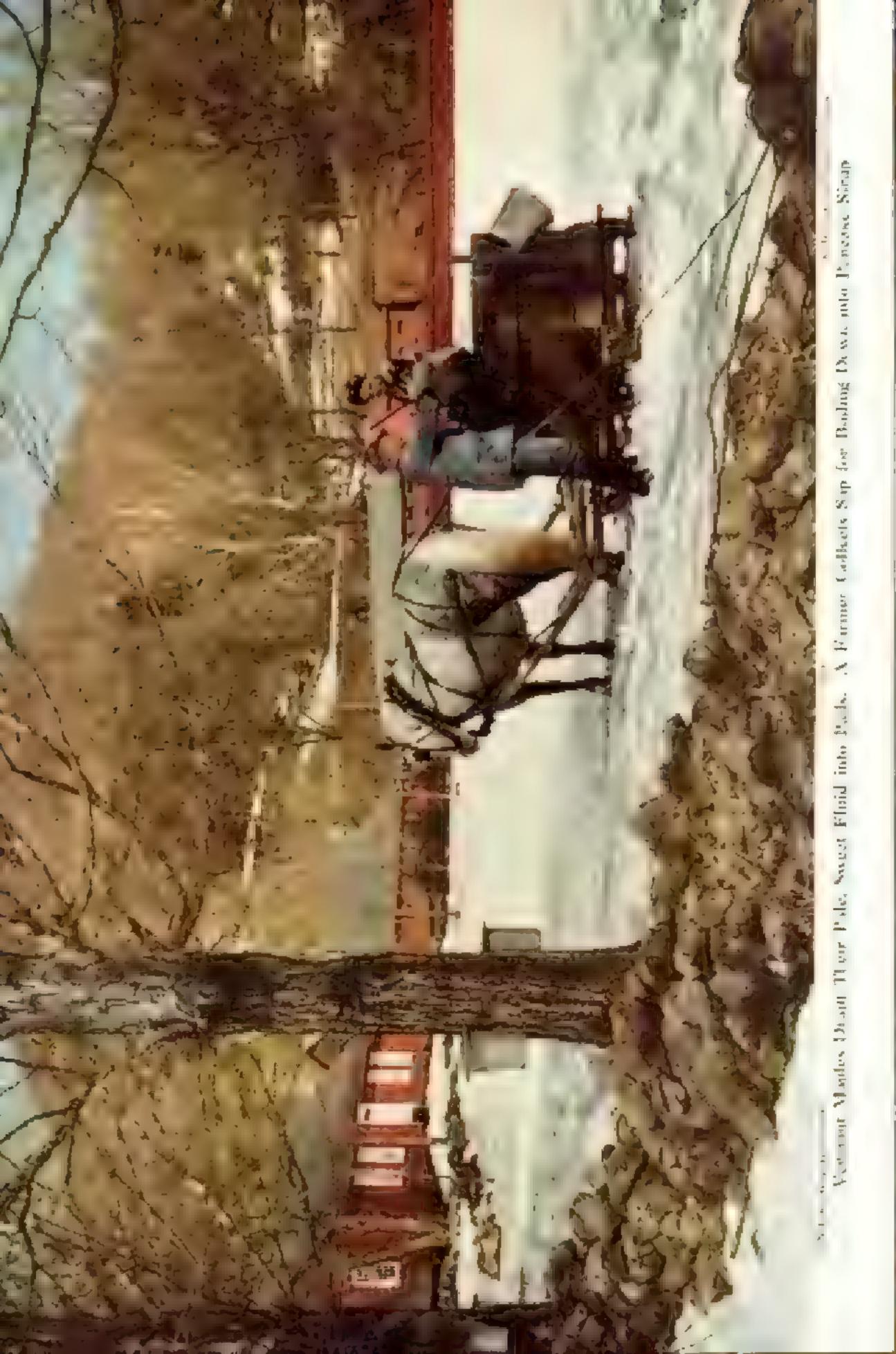
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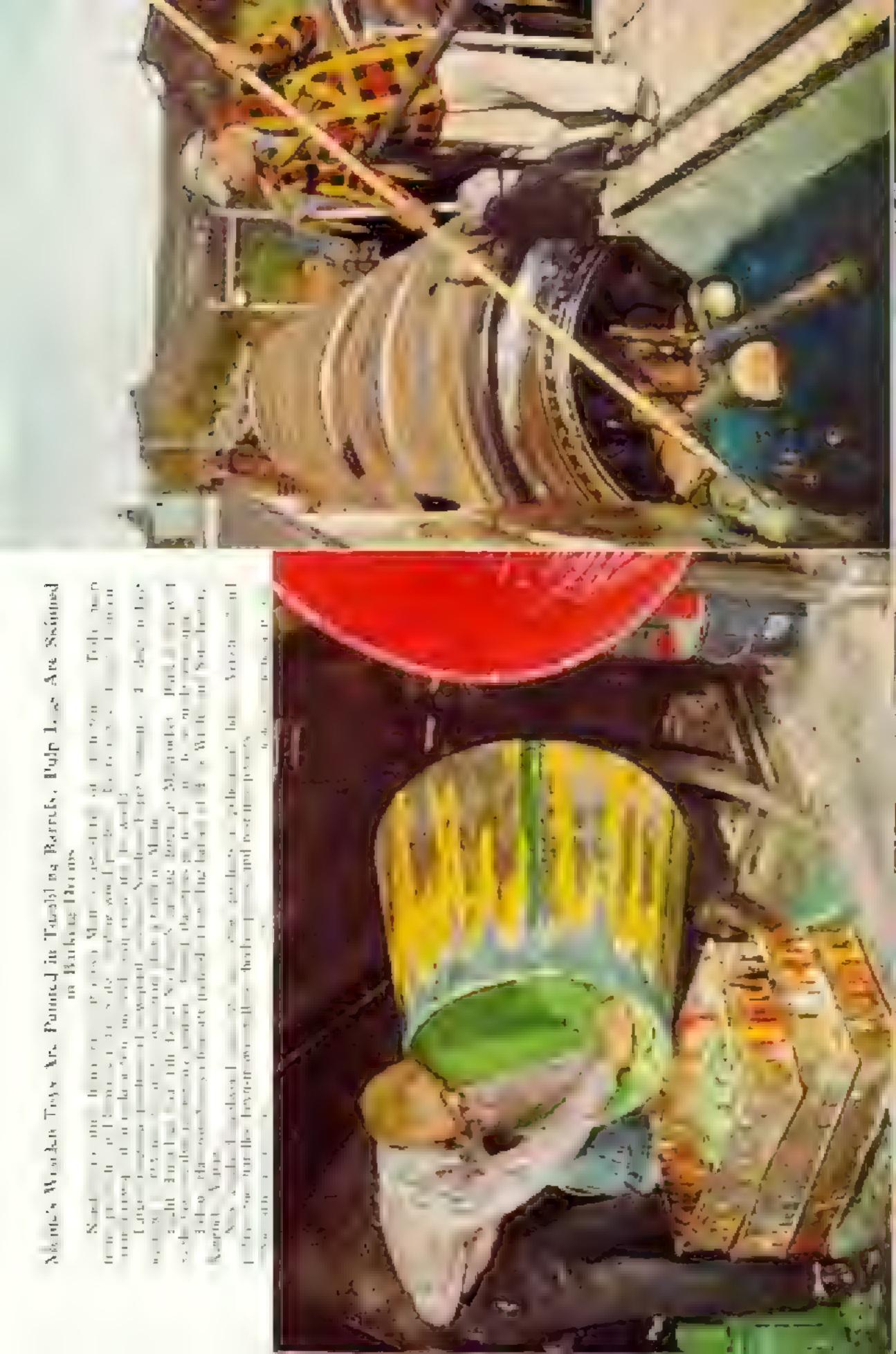


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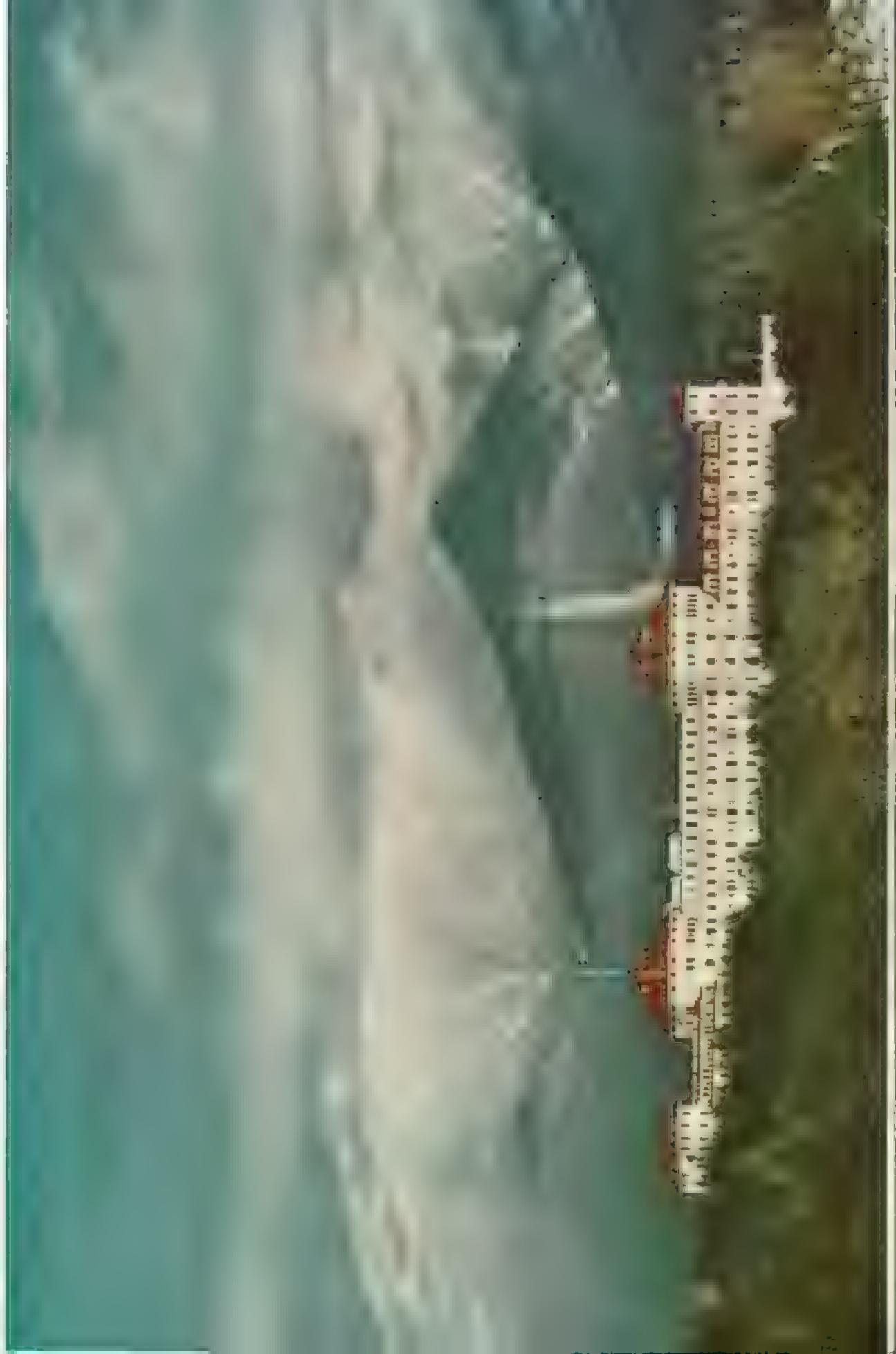
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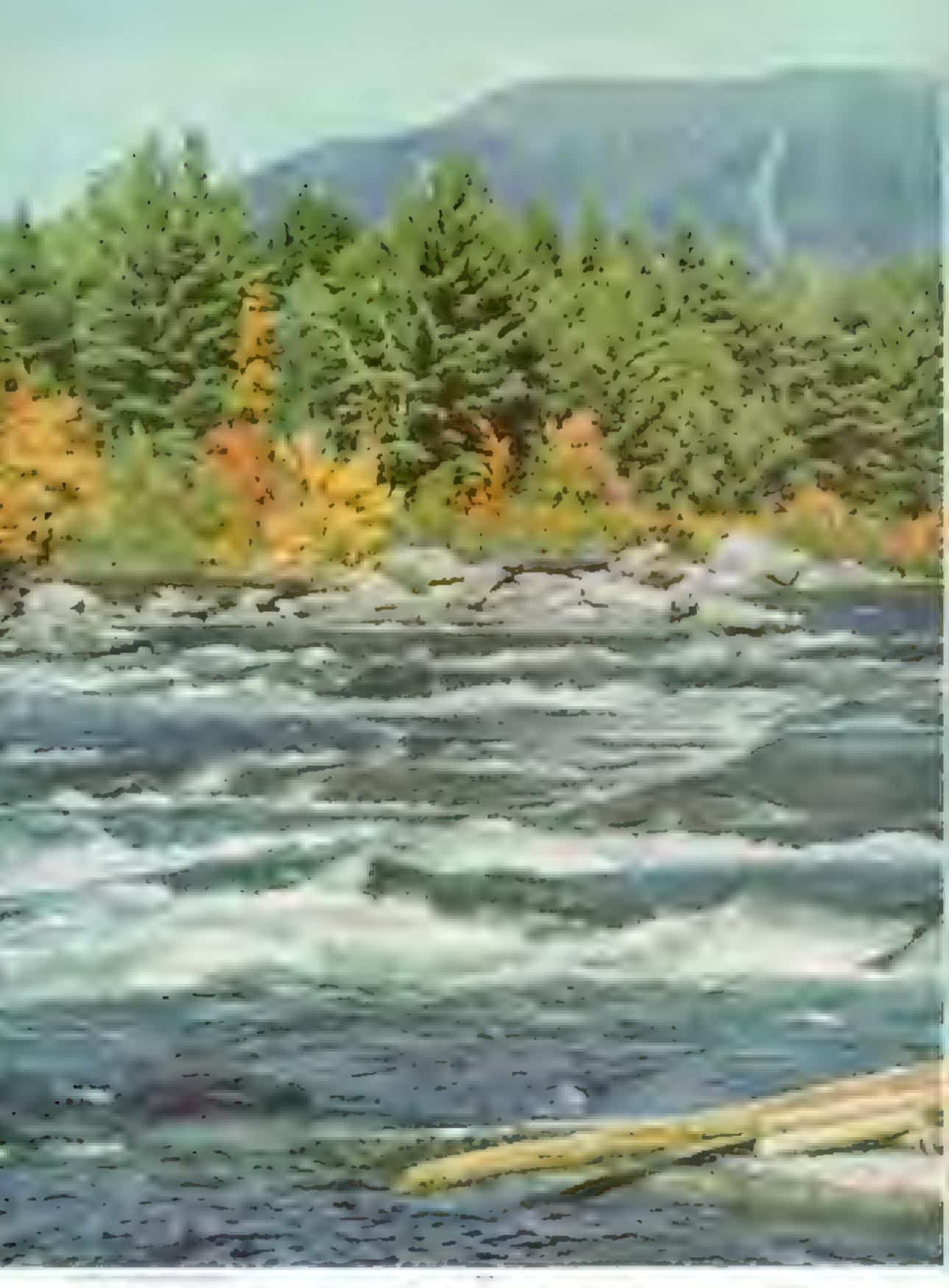
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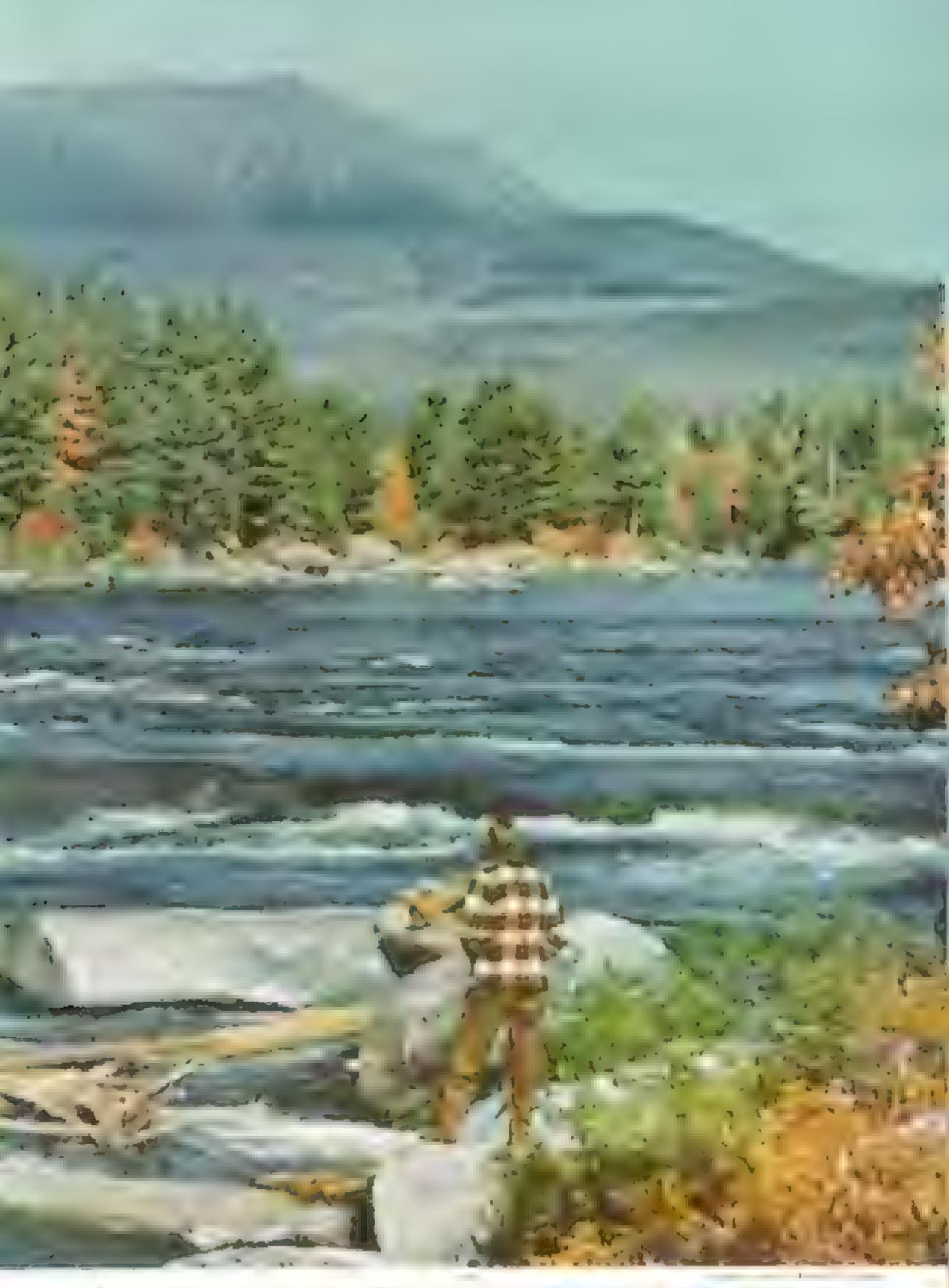
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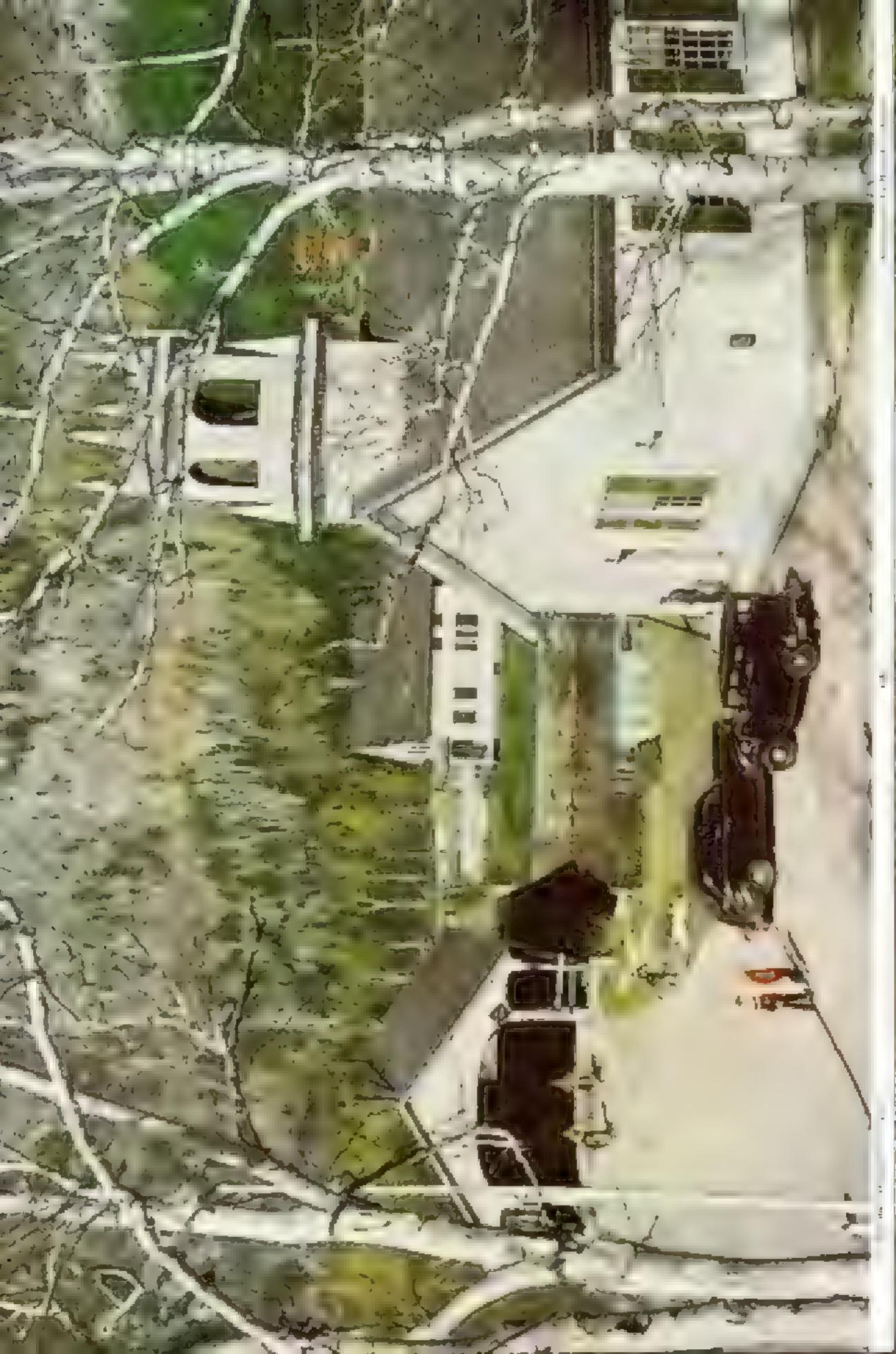


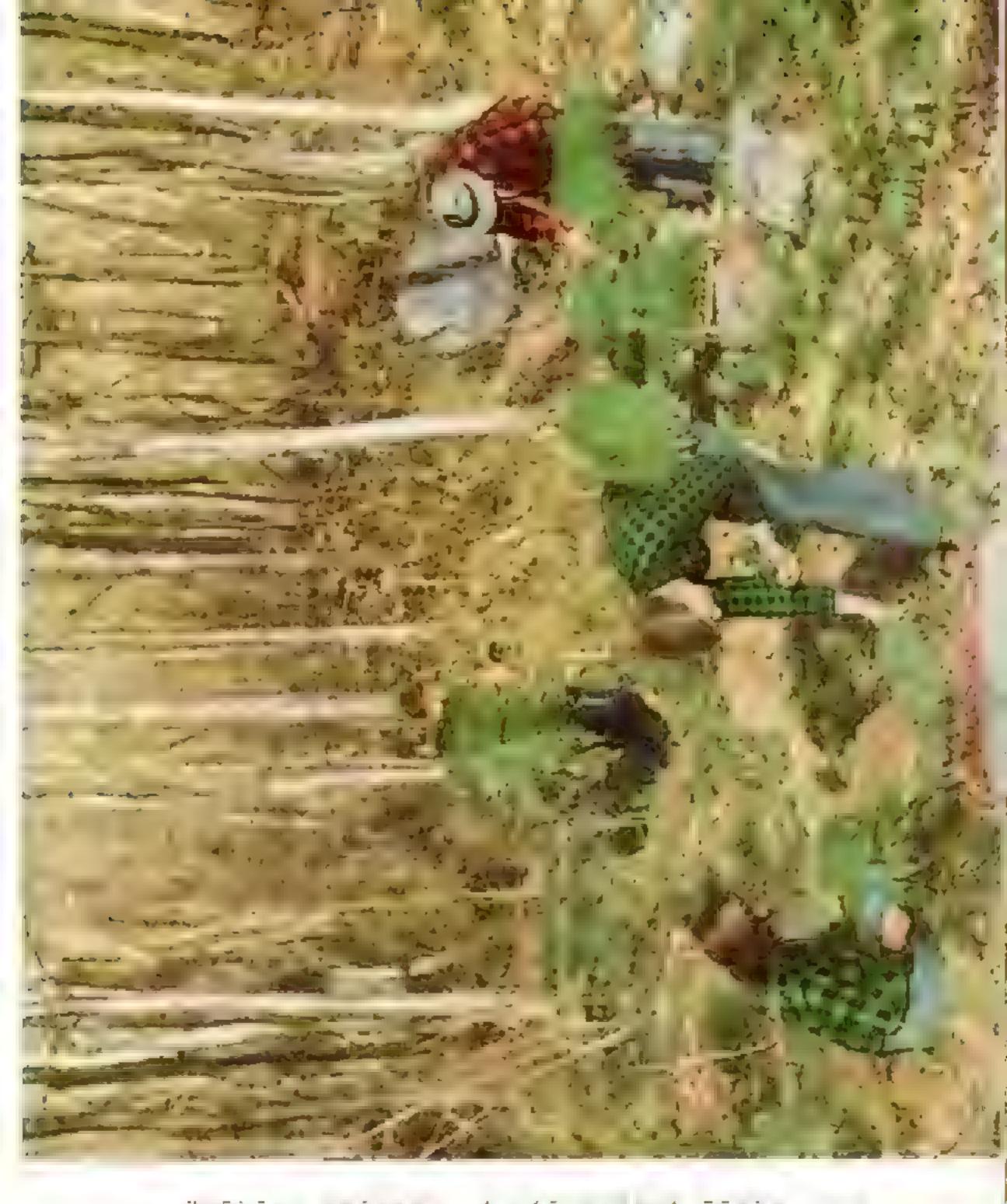
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A Journey to "Little Tibet"

By ENAKSHI BHAVNANI

Hoch Photo rivers by National Government Partier way by I carmed Historical

day?" out friends exclaimed. I suppose they were right. Our trip would mean a trek of \$50 miles on berschack and on foot over ground completely alien to us. It would mean everything from lash blicants to drought, so weights to desert sand, and temperatures ranging from below zero to 100 degrees above. It would essen strange people, strange customs, a different language and examonly. At worst it would be sheer trudgery; at best, rough going. But we wanted to go, We wanted to journey to Ladakh, sometimes trilled "little Tibet."

Inditically, Ladakh is in the eastern part of the now disputed State of Januar and Kashmir. In every other aspect, Ladakh and the rest of the State are poles apart. The Kashmir's are predominantly Cancasian by race and Moslem by religion, fiving in lash speem valleys.* Ladakhe, largely Mongolad and Buddhist, inhabit a cold, lofty wasteland.

Doorway to Tiber

Oace Ladakh was a part of Tibet. The people still book to the Dalai Lama of Chasa as their spiritual leader. They are still fibetan in religion, in blood, in dress, language, and cust mut

A glance at the map shows that the State of Jamant and Kashmir a.ts like a crown on the Indian subcoordinent. On the east less Tibet, on the west Pakistan. On the north Atomicas Sinklang and Afghanistan, a narrow strip of which separates Jamma and Kashmir from Russia (map. page 607). Claimed by both In mand Pakistan, the State is a coveted prize.

Tibet has never welcomed travelers. But remote Ladakh is virtually the divorway to the forbidden Land of the lamas. Ladaka was accessible to anyone who wanted to go there—to "the roof of the world," What could be bett t? To us secladed Lalakh meant fortaine, mystery, and adventure, something literally out of our world. Nothing could dissuade as. We were going to Ladakh.

Four of us—my movie-producer bustand, our young son, a woman friend of mine, and I—set out one bright August evening on horse-back from Stringgar, Kashime's capital. Our innerary: North to Gandurbal, then east through the Sind Valley to Sonnmurg and on to Leh, capital of Ladakh.

We were to journey for two months over desolate trails, with full field equipment, five servants, 20 ponies, food and lagrage, plus feed for the unimals. We took canned goods to supplement fresh edibles we hoped to bay along the way. For the most part we lived in tents, camping in the fields beside snow-fed rivers.

Our deily routing called for curly rising, a quick breakfast, packing the animals, riding on to the next stage, camping for the night always moving on. There were 15 stages for all, some long and some short, tanging from 11 to 26 miles each, determined by the difficulty of the route and the situation of the villages.

At the end of our first day on the mad after leaving Srinagar, we reached Woyil bridge, where we camped at the edge of the Sind River. A large suspension bridge in the valley 100 feet away arched over the fast-flowing, snowy waters.

Early the next morning we learned that we would travel by the rea, the system under which a vidage or group of villages supplies transport for certain stages on certain roads. The rate of payment was small, about built a cent per puny per mile.

Once again we started along the Sind Snow-capped magnitain peaks beammed the valley. Beautiful it wers filled the meadows, the pule river wound between crass and builders. The fields were ripe with corn and rice. The mountain walls grew steeper and higher. It seemed to me that there was magic in the atmosphere.

Strauss Waltz on a Carpet of Grass

We reached our next camp, at Kangan, at 5 in the offernoon. Since the pack ponies had gone alread, camp was ready for us. It was an enchanting spat, with a carpet of grass and the rippling sound of a spring a few feet away. A mountain wall stood grandly in trout of us

Evergreens yied for color with an azure sky. Little calves gamboled over the moss-encrusted rocks as we sipped our tea and listened to the dreamy strains of Strauss

* To a the Narrowst Groupspelle Managers: * The Late of Kashmir," by Volkmat Wentzel, April, 1948, an , "House-Roat Lays in the Late of Kashmir," by Florence H. Morden October, 1939.

I See "A Weman Paints the Thetans," In Lature

NATIONAL GENERATHER MANAGEME, Man, 1943.



Michigan Placin

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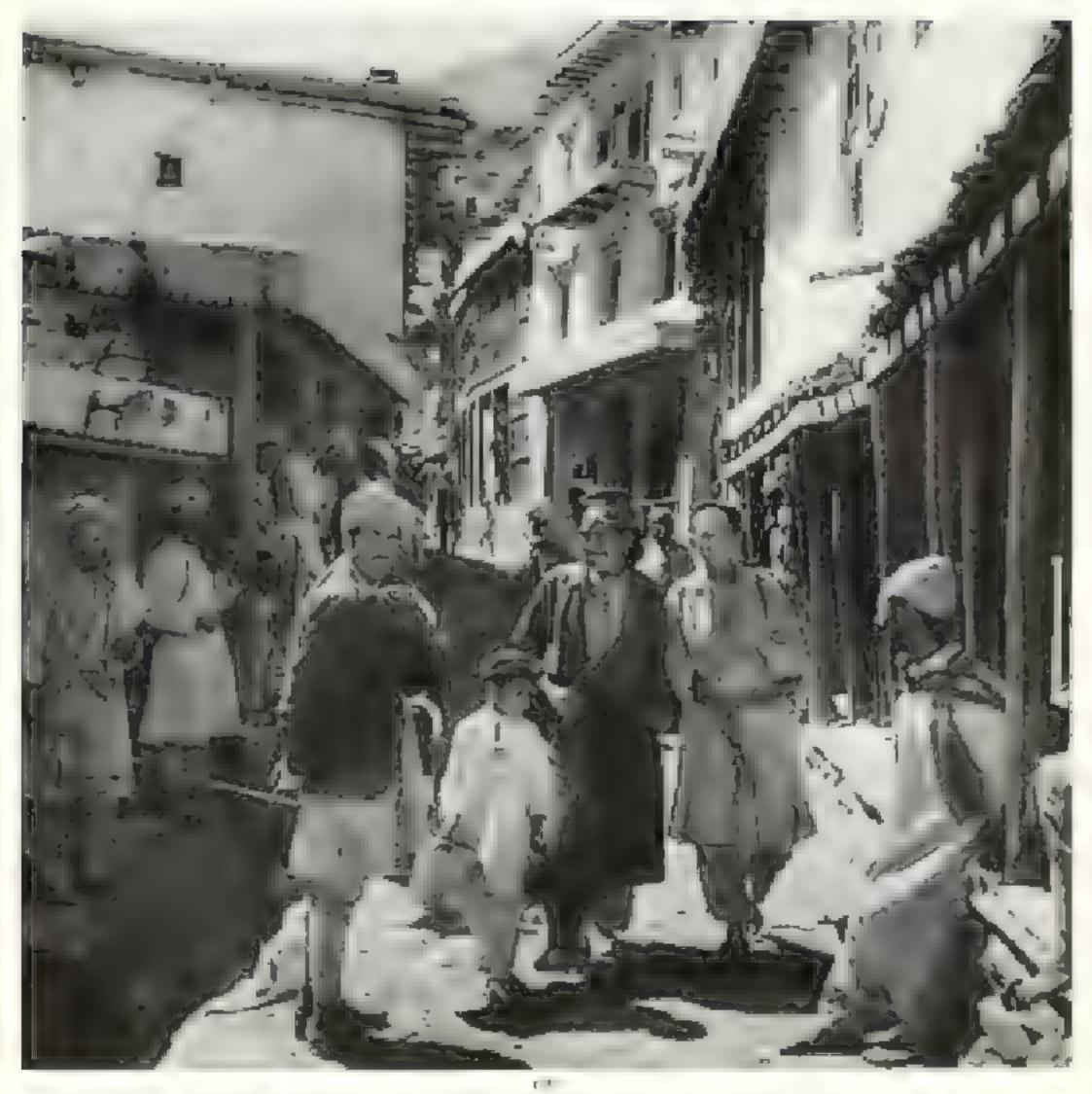
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The hosemen of course felt we had to much bagging with us. How traveled with only their riothes. Actually in addition to i... we took only the numerum of nace so exclusion that the man rum of the sound with wholen clothes for the feur of us, a games hag for lumdry, a sorre in the feur of the f

We really be to raceb it, i.e., unders not backage would have made the journey longer and more difficult. We always made greasport of doing without things, and enjoyed the feeling that we were being touch

The nest day we met a small caravin of 12 vaks and several Ladakhis the live we had seen. They all smiled in friendly greet.



Purjahr, Ladakhi, Yarkandi, and Kashmar Illustrate the Medley of Races in Kangil

Early to the first the first the property of t

rights then present of was a previous for as

It time to rain mit mining, an incossume in the fine of a manufacture, we present the
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array i classers cleamed elently in the everian in a silvery hand the south side powers hare I the pastures. We sont in a natural how was I term above sea level, not the trom cash zation.

it was misreably cold, for we had insufficient blankets, most of them wet. An its wind from the chilling faces of the grants over to through the soler. We not suppose the indicated a regard entry fire trying to the cold of a regard to the trying to the cold of a regard to the cold of the cold

The morning or de with brilliant summare we can used the interval the od mucht behind us. We should a few book writing letters to mad at the tary poor of a in Scalle 12.

After going on to bull we resed the



Language Library Stucks Sacred Broke Like Shoe Boxes. 1 nd Tigs Bear the Titles

tun et Z i I a (L. meri ; 100 , 11 50) fors al over on level. Here I giro the amount total the interest of the content of the

The pass is strewn with the skelebons of court forces. They belonged to the Kazaks who let U man, at profess on in Sakanag, few years up. Many laid prefelect it, or extreme orld and lark of surprise.

Here the tall pine shot term to a into a blue sky radiant with the sky in the group leading stew beside the proposes of resters of lemma to test datases. Several and implications decorate the same

Two Logs Bridge Glacial Greviers

The trail to Machb, was the coldest who as a proof the whole two the deep tracks one in the large and that gluens. There were no trees here as

there were in the Zoiling. It should be over for one? An independent of he world below bradges were non-cours. In cross the term, torrents which rushed out form such glands, there were only small bridges of two larger orders by tool trackles ported to a sew of the property of the prope

Usually the convertes and our mounts were led a male or two around, over a large speed traige at the foot of a gloon, in accordance is said to log bridge. We outselve the factor to be found to be a large over that a large above form the dailing, while greater that is because of the dailing, while greater that is because of the dailing.

As we moved on to Mateyur, the trust her able to the fact. Filled with the anoth of the last terise costs several the stream. Sometimes we always touched be waters edge, again, we were hundreds of feet above it.

Ladakh: a Stony Desert on Top of the World

Within some 46 000 square miles, Ladakh builes a population of about 195,000

реорие

return.

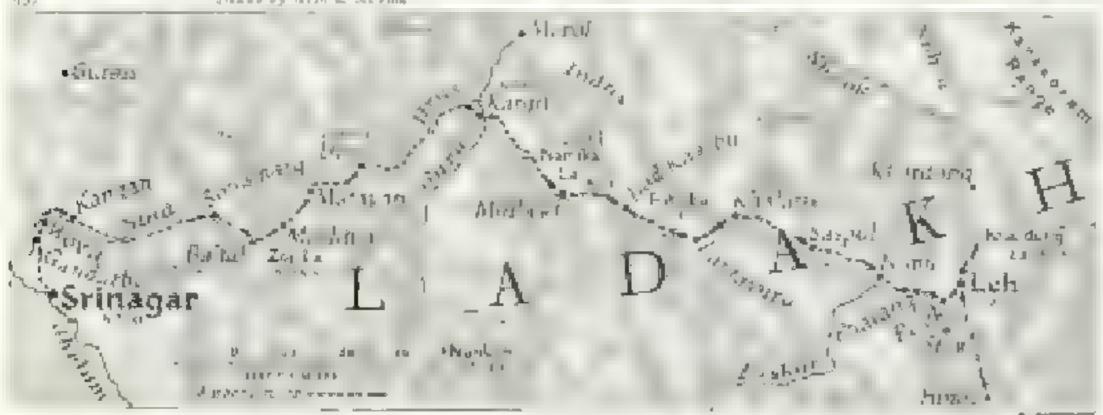
Religion (Buddhism) and race (Mancolian) jour too Ladachas to Thet. to
which there executors gave alternature. Potree at the Ladachas to the Ladachas are a principality where Hindu mahasaja
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Ladakh has one mala highway, the socalled Treaty Road, artually a pany bud, which connects Sumager and Leb. The roate was taken by the nuthor on her 550ture came on type, S impar to Himis and

I earling Karlitoft's preen wale, Mrs. Blancians chrohed the 11.530-foot Ze, i Lu (pass) and optimed a strange, let a patera where bothing prew save in those spots others irrigators could from water. Its boths 10.000 feet bigs overhung her route from across supremus a distances, they appeared close at band so rare and clear was

the ner Mountains say could "almost track" back a play or more to feach.





We met a post runner carrying mail from Leb Each runner had to the three miles a day, handing his post to a relief at the end of his stint. At each relay point streat a small mud and stone but where the tunner banded his muil over to the next fellow. I rom Baltal on, people did not actually understand miles, They measured by daks, or post distances, of three or four pules each.

We spent a bitterly cold night at Malayan, with freezing wind tearing at our tents. The next morning it was still cold. Furt the scenery was unique—straight and fine like a Chinese etching. There was not a tree anywhere, scarcely any grass, and no dower dotted the wide plateaus.

Later in the day the sun cause out and shone over the respletident insuntains. The scene was like a painting, with builtiant bues over

the mountains, turquoise merging into sapphire skies, and a purple horizon. It was almost unreal.

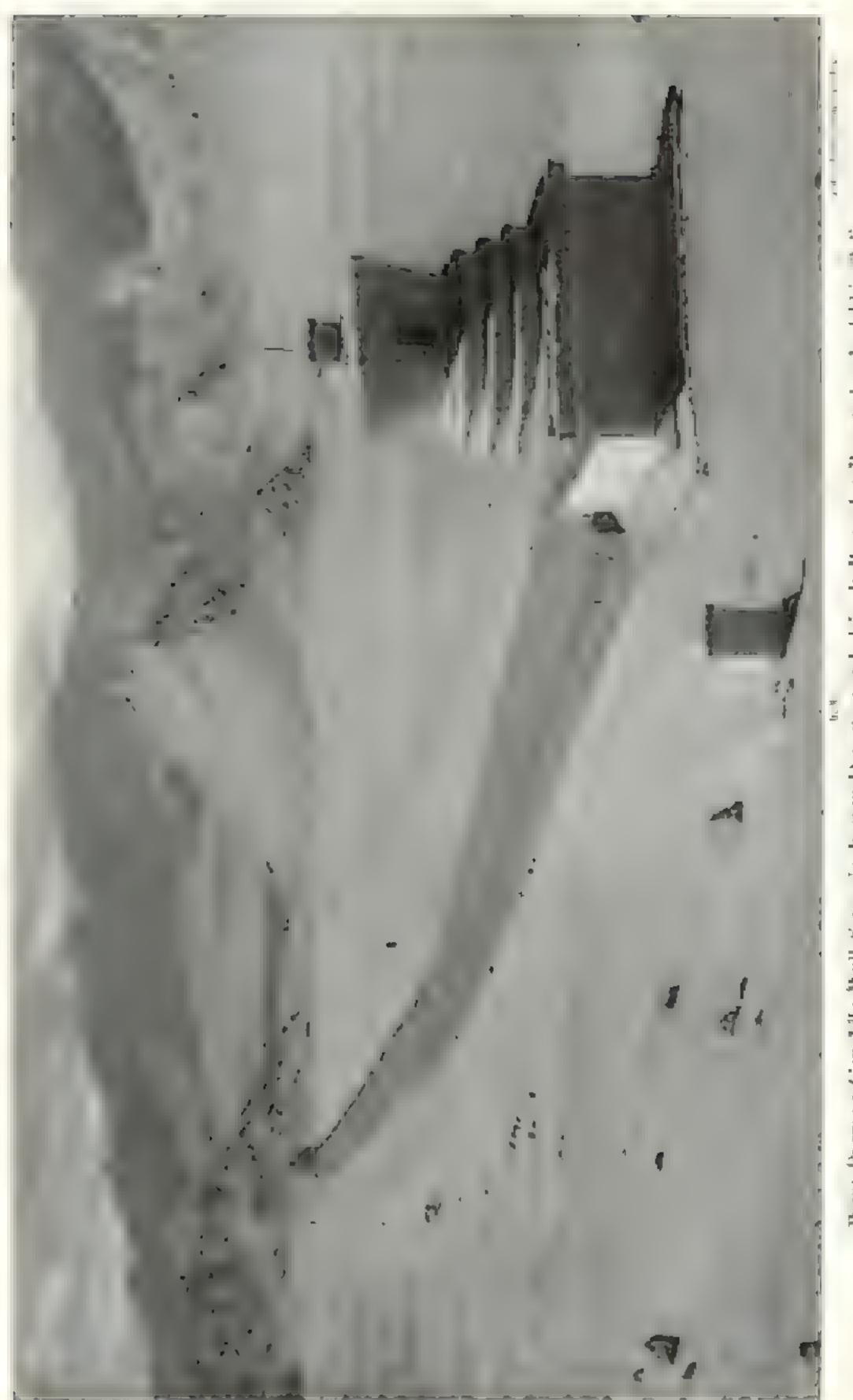
Dras, the next stage, is the land of the Bulti and Dard people.* The men wore long cream-colored, hand-woven wooden coats and felt lumits. Riding fast ponies with wooden saddles, they resembled Cossacks.

Their women, garted in black hats with vells, and tanies over full trausers, were tending the bright yellow fields. They looked much like the Turkis of Russia.

Snow Traps Inhabitants for his Months.

Except for grain fields, the landscape was deviated a vice of or and studied with many

* See "First Over the Roof of the Warfd by Motor," by Mayner'd Oven Wilhams, Narmous, Groundries, Market, March, 1922



Experiment of the second of the property of the property of the second o In Praga for Possers-by, Ladakhis Beliese in Penpiny I have a good being B zar Prepaye Can Idle Wall Serve

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colored stones. Little villages nestled deep late the mountain slopes, their roofs barely visible. The hard-working, thigh inhabitants are matocated by snow for six months of the part. It summer they all safe who is not hard-arley and rent their ponies to travelers.

Again the night was windy and cold. The pext morning we were greeted with depressing gray rain. We met a party of Americans who were returning from Leh on the same route It was pleasant just to I sten to them talk after hearing the Salti language, which resembles a strange mixture of Russian and I binese.

We moved on to Kargil, the halfway point. Even in good weather this particular stage

of the journey is cold and rough.

The rain only made matters worse, causing a number of landshdes and cutting deep rifts into the trail, making the going slow and treacherous

Our hands grew so cold that we could not held the reins, and had to dismount and walk from about 2 in the afternoon until 9. Our boots were caked with mud, our glaves solden, coars cold and clammy.

But we had to take off our wet buts to the setvants. They worked wonderfully and never complained, pitching our tents, unpacking and

serving our meals.

Must praiseworthy was our personal houseboy, a South Indian who had lived all his life on the scorching plains. He was always the first up in the morning, notwithstanding the terrible cold and the fact that he stack to his strict vegetarian diet throughout the whole trip.

Washday in Ladakh

When we finally teached Kargi, the rain stopped, Houses were packed in rows within groves of apricot trees, with a long bassar wedged in between (page 605). Propingreeted us from their housetops and wuntres as we passed. We decided a day of test was in order.

My woman friend and I welcomed the change. At last we could wash our clothes, in the heart of the Humalayas washday is unknown. And I must admit our eamp looked somewhat comic with a line of wash thapping in the breeze.

The greatest excitement in Kargil tame when we called at the midget post office and picked up several letters, newspapers, and telegrams.

That aftermoon my friend and I changed from becomes and shirts into saris and samdals and catertained two Luglish-speaking local officials at tea. For the first time same we had left Gandarbul our faces were free from the generous coating of cold cream we used to avoid simbura

We picked up our trad again. The trip to Mulbekh was uneventful. But beyond Mulbekh a whole new world opened up to 14, for here began the june Tibetan coun-

try (pages 630-631).

We spotted our first lamasery, built high on a bill overlooking a paragrams of river and feld, with ranges of the Himshaps all around. The Tibetans in their flowing wooden costs and embroidered boots (ascenated us.

The World of Last Harizan

Villages appeared from time to time between long barren stretches. We passed splendid whitewashed houses whose architecture reminded us of Lost Horson. We were attributed to the peculiar Thetan food of powdered borley mixed with hot tea, rancid botter, and salt.

The raute to Leh is nothing more than a pony track. Under British control it was turned into Tracty Road and became a notable trade coute. It continues on from Leh scutheast to Denubuk, Tibet (map, page 607), and then on to Lhasa. The Kashmir Government kept only a small garrison at the (rap.ier.

Ladakh has on orea of some 46,000 square tilles, about the size of Pennsylvania. It bolds a scattered population of about 195,000

It has been said of Baluchistan (new a part of Pakistan) that, after the world had been made, that country was then constructed from the deads. The same might well be said or Ladakh.

The entire province is studged with gigartic barren mountain ranges and riven with deep narrow garges. The whole region lies very high. The average height of surrounding ranges is 19,000 feet. There are infrequent datches of irrighted land; these are the highle cases.

But it is a fastinating country, inhabited by a most charming people who, despite their savren kind, laugh their way through life.

The farther we advanced, the more unreal the scene became. Days passed without sight of grass. We climbed to 12,200 foot Namku La, overleading range after range of mountains and a vast space of indistinguishable landscape.

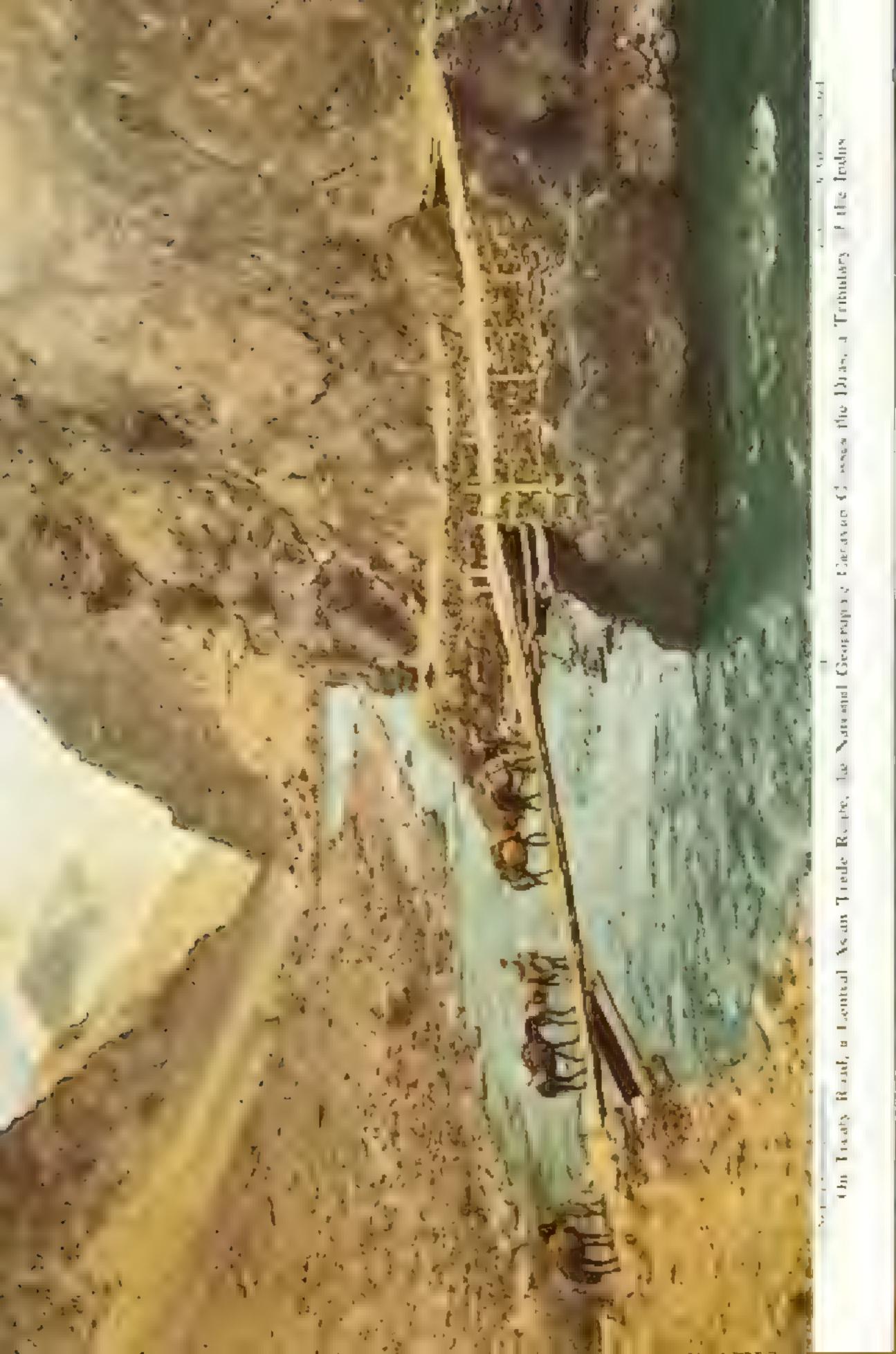
t'old wand pushed through the valley. The temperature at the height of summer dropped to 22°, when just a few hundred miles away the paths of India sweltered in 122° heat

We came to know the typical Tibetan horseman who traveled with us (page 621). He carried as his only luggage a chekmak (flint



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A Central Asia's Surprise: Window Boxes in Leh

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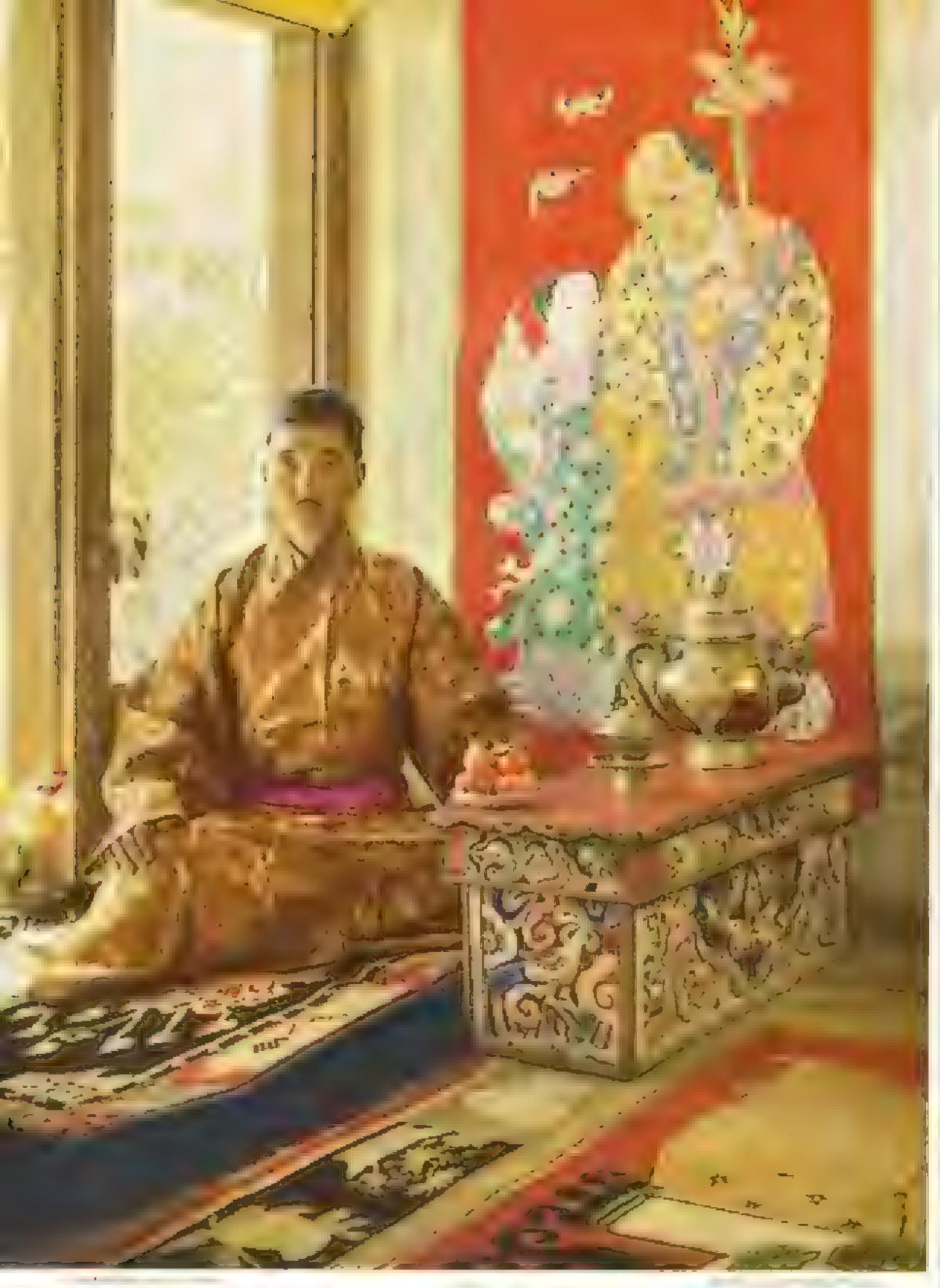
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I Has bloom I and educate Therm Mr. Chicas Set in Lawrent Carrier of Leh to the control of the c

and metal matchbox), a small conger, a brass allow spoons for certing, a wooden towk, a little leather purse with thread and prodle, and charms against evil. I was reminded that

"Man wants but little here below."

These people had so little, yet were content, happy, and free from envy and conceit. I can't remember ever seeing a Tibeten out of temper or sude or complaining on our journey. When we stopped for broch on the road, they squatted happily beside us, grinning in contradcly fashion and enting their reasted barley protest.

They began teaching us the Tibetan names of various objects. It was not long before we learned to say "Jooky" (good day). Consumity they begied us for eigerettes, which they smoked with the greatest pleasure. We had brought about 5,000 extra eigerettes just for such a purpose. These proved to be appreciated much more than type of money

The nen were flowers in their hats and were pleased when we put flowers they gave us in our hair. These horsemen were the happiest

and jolliest we had come across.

They were singing, dancing, or laughing all the time, especially one old man who had a gleam in his eye and considered himself quite a from Juan. He was a wonderful type, a real Robin Hood, wearing his hat at a jaunty angle. Their singing was reminiscent of something Arabic and something Chinese; their dancing was Arabican, with fast turns and waving arms.

Skywernper in the Sky-high Himelayas

We now came to the third great pass. For I La. 13,432 feet high. Beyond it Lamayuru stood supreme in her gargeous virgin beauty. The lamasery reared its head from a steep hill shaped like a Gothic cathedral. In the fareground green and yellow corn spread a carpet. In the background the background the background the background.

The lampsery was perched alop a steep cliff rising more than 100 feet straight up from the theor of the valley. It looked like a penthetise on a windowless skystrapet. Above it prayer flags fluttered in the breeze.

We were invited to visit the lamasery, as are most visitors who come to this remote region. On our parage we climbed the narrow steep path that leads to the top of the pinnacle and the lamasery. Once in the courtyard of the top, we were ashered into the central prayer chamber.

Heautiul old inscors and paintings of the afe of Buddan buck the ancient waits. However, and that of the first thunkuk (head ama, or abbot) were placed on an after of

brocade, with ever-burning lamps and water burds before them.

A skusbok is believed to be a remearantion of a very buly and virtuous man and is chosen by establishing the fact that he was born at the moment his predecessor died, or by the all of an oracle.

An air of neesticism filled the monastery when one of the lamas took up an old parchment and chanted for us. Covered with beautifully written religious verses, the number of ine old parchment and bound with silk (page 606).

Christian Mission in "Little Tibet"

The whole country filled us with a strange wonderment. For the first time since leaving civilization, we left that, in the midst of the grandeut of the mighty literalayas, these simple people, and the mystery of the atmosphere, nothing that one counts important in city life mattered. Life took on a different meaning. We unconsciously moved nearer to the spirit of perfect solitude.

Moving on to a place called Khalutse, we stopped for lands in the garden of a Moravian messionary whose wife is a well-known doctor. They were in Leh at the time, but their assistant, a young Tibetan convert to Christianity, welcomed us and gave us apples and

aprients from the adjoining orchard.

After bunch he arranged dancing for us, it was the first time we had seen Tibeton women dancing. Being a dancer myself, I was much interester. A group of young girls and women arraved wearing the usual black or reddish-brown gowns, tree, at the wast with a small shieldlike ornament, and with tassels hanging from one side.

They were al. very jolly and danced in little circles, singing and laughing, and opening and closing their fingers ake the opening of a hud. There was not much variety or beauty in the dance. But the strange environment, the laughing Mongolian faces, and the weird accompanionent of Tibetan flute, drams, and cymbals made it fascingting.

that I was disappointed. These were unlike our colorful peasant dances in Hindu festivals, where wemen dance with much grace and exquisite hand movements.

Success Story; Golden American Corn-

When we were leaving, the young Tibelan presented us with several vegetables—carrots, paraphise, caraloges, and communes. The big surprise, however, came next morang, when the cook served us delicious cam. Later we learned from massionaries we met at Lea that it was Golden Bantam, which had been im-



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People walking toward us with their in the term of the term phenomenon are some that their interests and the term of the term of the when the week at the term of the term of

At our next stage, but before Leb, we had send substitution to capital, at 5 in the Name, 18 miles from the capital, at 5 in the capital at 5 in the capital act to the people against a act to the theory were trively to the larger than a larger.

They invited us to see a performance of dancing given by two Ludakhi girls. We accepted their invitation and took along our camera to take some pictures. We returned to our tents in time for dinner and thought no more about the dancing.

But the next morning, as we prepared to start, our valuable camera with special lenses and filters was missing. The Demchok party had left at 6 in the marning. We questioned the watchman; he assured us that Tibelians were too bonest to have stolen it. We searched the entire area and searched it again.

But our camera was gone

We set out for Leh along a fantastic read framed in batten mountains, often without vegetation. We passed only occasional villages. The ancient monastery of l'ituk, commanding a splend d view from its distant height, was an interesting landmark along the way (opposite, and page 628).

Farther plong. The road was suddenly glarified by the parerama of magnificent snow ranges that shoot before us, glistering white and pure. It was the famous Kara-

koram Range,

Suddenly we sighted Leh, an casis amid tings of snowy mountains. Barley and wheat waved in the near by fields. We could see the old palace of the kings of Ladakh, and the Lamsery of Sankar (pages 614 and 615).

Elags Wave Prayers Heavenward

Outside the town we saw long manis (prayer walls). They consisted of exquisitely carved rough stones bearing the inscript on. On mani padme hum, menning, "the took jewel in the lotus, amen" (page 108).

The stomes are set by pious mortes who believe they possess a magic power which is supposed to bring peace to the soul after death. Near by there is usually a line of prayer flags waving in the breeze. These

carry the prayers to beaven.

Leh, with its population of 3,000 people, is on "the forf of the world," The entire country has at an average height of hetween 11,000 and 14,000 feet above sea level sprobably the highest area where that many people live permanently."

Traveling to Leb we had crossed three high passes. Now, just before us, stood the historic Khardung La, 18,380 feet high, the

open door to Yarkand.†

We journeyed up to the pass one afternoon, hading the trip extremely strendous are couse of the ranged atmosphere. We stood looking about us. Far below by the village of Khardung, and all around the snow peaks of the Himningas greamed like sentinels,

chaste and noble in their garments of white.

A puny track can north to the Karakozam l'ass, about 150 miles away, and on to the actual boundary between Sinking and Kashmir.

Our yaks browsed in the cold and were nadaunted when we were suddenly caught in a heavy showstorm on our return. Returning to Leb, we came across the zho and zhomo time and female crosses between a coward a yak). They are stronger than the average tow or bull, and are used for heavy transport, long travel, and for providing milk

l'eople from the strange and exciting world heyand met in Leh's banaar (page 630). The Yurkandis, some in smart top boots, black uniforms, and small skull caps; people of Russian and Chinese Turkistan; merchants from Lhasa; Kashmiris and Indians, all swarmed the streets.

Little whiteveshed houses stood huddled together in dozens of short, sloping lanes. Their rooftops were covered with bay drying to feed sheep and goats in the winter. Contact storage, and hundreds of fars, piled one upon the other, barred law doorways.

We camped in a beautiful garden faring a range of the Himalayas. A stream tinkled beside our tents, and apples and apricute bung

from the trees above

l'assing through the long line of the bazant in Leh we were followed by a crowd of Tibet ans, chartering and laughing heartily. Wide-eyed women pointed at us. Later we learned that they were highly amused to see women dressed like men in breeches, shirts, and coats, and were trying to figure out whether we were grown-up boys or frenks.

A Bit of Estrope in Central Asia

We met the Rev, and Mrs. Walter Ashoe who can the Moravita Mission in Leh. The mission has performed a humane work for many years. Its doors are open to every netestabless of creed. The mission also maintains a hospital and a special industrial school which promotes Ladakh's woolen industry,

The Asboes, who are English, lived an a little clay cottage, built, they said, for \$200. Their garden was full of fragrant reses and sweet pens, cannas, snapdragon, dassies, lark-spur, gladiola, and forget-ne nois. It was a little bit of Europe in Central Asia

The house boasted cartained windows.

* See "Man of Asia and Adjacent Area," or plement to the National Communic Material Materia,

The "On the Morals Elighest Plateaus," by delimit de Tetra, Nation to some Morals March, 1931.



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Yellow Hars vs. Red Vicalis

We also met Father Gergen in die in tured Thetan gentleman who had be a substian and was the chief minister at the Moravam Mission. Has lovely daughte married to a young Tibetan, the nephew of the R. at a Stak, a descendant of the or in the order.

lather terms in well as an author manuscript whiten in the Till tan print. It was an exist i and by ment the kings of Levilla nearly well as a search as a latest radial and a remainst well. There are the arriver well. There are the arriver of the Yelley Has there a man in the latest related the votes as the arriver that the arriver have with the same as the arriver to the transfer of the wind latest as the arriver to the latest and the same are the same and the latest arriver latest and the same are the sam

There is little discrete between "Red" and "Yellow there. Red the event that not because they are for autists but

because they wear dark red cloaks—trace their origin to an old T betan sect which

began in Tibet in the 8th century.

Ye low lamas also wear red clocks, but with a yellow last (page 511). The Yellow lists are the more austere, but actually there is little difference in doctrine. Yellow lamas pred animate in Tibet proper, while the Resistanth headquarters at the Himis lamasery, are stronger in Ladakh. One out of every six Ladakhis is a lama or a page.

When we were in Sringer, we were told of a book written by a European who advanced a strange theory. The author tlaimed to have found documentary evidence in Dunk that Jesus Christ had been to Ladakh in His Letture. After the truciation, so the tale you trust was brought secretly to little Tibet, brought to left by Himakiyan berbs, and later ascended to beaven from the Himakiyas.

We were also told that this at the mentioned going to Ilunis and seeing the doctament with Father Gergen. But the venerable old gentleman assured to be knew of no such evidence. Though he remembered the author, be had never been to Rimis with him.

After reading the book, several European church dignitaries wrote to bather Gergen asking for corroboration and details of this

emitter.

When we visited Minis, we asked about the document, but the I mas didn't know what we were talking alout. It was Greek to them!

Our first Thetan Lunch was at the house of a landford. We sat around the more on the pilk carpets at little lanquared tables and were served Tibetan tea in delicate jude howls. It was real punishment sipping the

highly salted, buttered tea.

The neal consisted of spaghetti and tomato sauce, chicken and beaus, sait meat, potators, curried gravy, rice, and baked apricots. Our host then offered homemade change (beer), and arak, a kind of works made from barley. We tusted a few drops of each from sheer politeness. According to law, Tibetans can make these crinks at home but cannot sell them to anyone.

We found the fadakhis charming, hospitable and colorful. A man wears a loosefitting, knee-length coat, called a gonche. It is coarsely woven of beary homespun wool and dyed a reddish-purple color. Around his walst he bes a sash (skirte). Felt socks (namela) cover his legs to the knees. For a bled warmth, his shoes (publical) are trade of heavy knitted yarn but have leather soles. A fur- or wool-lined cap tops his costume. The cap has flaps that can be pulled down over his ears in winter months (page 629)

A woman dresses in much the same fashica, except that she wears a heavy skirt with her gonthe (page 60%). Over her shoulders and back she wears a gontskin, for side in. This cape is worn as neach for style as warmth.

Her Dowry Goes to Her Head

Her fairly headdress (peyrok) consists of a strip of cloth extending from her forehead, over the head, and down her back. The peyrak is studyed with chapts of turquase (page 627). She also attaches patches of black lambskin to her hair; they stand out from the sides of her head like giant, protrading earmoffs (page 616).

Actually, the peyrak is a woman's dawry. The collection of stones starts from the tirm she is horn. It is her whole fortune. One glance will tell a prospective suitor have tich

After 19

Even the naturally posy-checked Tibetan woman is not without her cosmetics. She applies the juice of a tiny berry, similar to the gooseberry, to her face and decorates it with a design using the saluate seeds. The result is attractive and practical. The juice serves as an anti-such or cream. The seeds silk to the face and the skin becomes tout. Wrenkles stright

I used the berry juice and seeds myself, instead of cold creen, for three days. They are much better. But they took too long to apply, so I lost primate and went back to modern face cream

of their berds and the cultivation of wheat and burley on their sky-high plateau (page e28). They spend their spare time weaving and spinning whol and felt for boots and rugs. As they worked, their chubby, enrefree children chuped metrily with pashning goats and sheep and tumbbed around in the fields, their grimy faces by with misched and

The most striking thing about these people is their honesty and the fact that they never barg on for anything. We haked up a others all the time we were in Leb., though Ladakhis waked through our campsite constantly.

Occasionally they came to our tents to sell us set venirs. We bought antique rings, neck-laces, bracelets, and thorase for rediculately

low prices,

For instance, I bought a lovely off silver and coral necklare for about \$2. When a silversmith in Stanzar saw it, he offered no many times what I paid, but I wouldn't part with



Prose grapher Wentzel Tests His U.S. Army Rations on the High Lomos of Himis

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No Wedding Ring for Ludakhi Bride

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Thetan culture goes for deeper than simple privs and sport. It is shown in exquisite gaustings and artistic curies. Their sapeth frequest and pointings deal with religious themes inspired by their ancient theology. Their delicate branze said stures are perfectly muided and smooth. Tibetan jewelry, too, shows an original touch

We took a trip to Himis, 25 miles south of Len, to visit the famed luminery. The road stretches across a dreary and monotonous landscape. All that we could see for all es was stones and boulders and more

stours and builders

"Hidden Valley" of Himis

But the Valley of Himis itself is the closest thing to Shangri-La we could hope to see. Fucked away in the aigh Himanayas, it is called the "hidden valley." Its secluded bearion has undoubteelly saved the valley and its funted lamasery from destruction by Asiatic conquerors sweeping across the land. The luminery, headquarters of the Red Sect in Lariakh, is the richest in the land.

Once we arrived in the valley, we had a long climb up to the lamasery, perched high on a rugged mountain crag (page 613). We stayed at the summer pulsae of the skushok, in a garren filled with wild flowers blooming at a height of 12,500 feet. Near by, the lamasery lifted its sacred head almost into the clouds that linguised over the peaks.

We were fortunate to be in Himis for the celebrated two-day Devil Dance Festival. The first day we took a commanding post tron overlooking the courtyard, and waited for the sun to come cut we that we could film the ceremony. But we waited in vain.

At 6 in the evening, one of the lamas offered to say special prayers for bright sunshine the next day. We accepted his offer emciously, and he began a droning prayer chant that seemed to have no end. We were glad when he finished and scleanly assured as there would be sampling for us the perturning

Sure enough, it was a lovely day, and we filmed the (estivities, which were practically a repeat performance of the previous day. Similar to other religious dances we had seen, this was done by lamas in elaborate brocade customes. Some wore masks of animals and skeletons, and others great hats crowned with

images (pages 632 and 633).

The dancing depicted Budduc's light with evil forces, the criving out of wirked spirits, and the ultimate triamph of good over evil. Buddha was portrayed with the mask of the Lon, whose strength, abbitty, and greatness of heart destroy anything humaful to mankind.

Accompanied by an orchester of drums, cymbols, and giant 10-best trumpets, the dance continued. Lamas paramed through the courtyard, whicking and circling, maying faster and faster as the dance reached its clinars. Other monts chanted bymas and sprinkled hely water.

The dance did not stop until sunset, when the largesty gunes called the monks to vesthe. The sun cast a strange studies over this

land of invetery.

As we walked back to our quarters, I felt how true were the words, "More things are wrought by prayer than this world dreams of"

We returned to Leb for a few days, then decided we must start our trek back. It was already early autumn and the flowers were gone. Winter was on the way. Snow now covered most of the high passes and all the peaks.

Just before we left, we received the good news that our missing camera had turned up to some thieves can be. The man who stole our camera was one of the servants of the party that camped with us at Nimu. He told the shop owner that he had bought the camera, complete with special lenses and filters, a few months ago for 15 rupees (just over \$3). Could anyone doubt that he was a novice in the game?

Lafty Hinmingus Hount Every Traveler

It had been difficult to get the necessary travel permits to visit Ladakh, the remote province so little visited by people from the outside world. And the trip was long muchard. But our rewards were satisfying real adventure and many wonderful premories that would never die

Although we were back in Stinagar, our thoughts were elsewhere. The Himmayas have a way of getting uno your blood. The fascinating people and places we had seen haunted our dreams and wove a mape spell through our waking moments.

We spoke constantly and fandly of our trip. But we thought of only one thing for the future—when could we go to Lhasa and Thet itself?

Any traveler who has seen the indescribable lottings of the Himalayas, felt the peace and contentment of their immeasurable space, the strange atmosphere of their magic, is irreverably called back there again and again.

*See, of the National, Consentent Manager *With the Devil Patters of Chara and Tibet * 40 th, in roler, July, 1931, and "Life Among the Lamas of Chook." November, 1938 both by Joseph F. Rock.





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Flamingos' Last Stand on Andros Island

By Path A. ZAHL

With Ithurrations from Photographs by the Author

ABOUT ten years ago a visitor crossing one of the numerous shallow likes that out Andros Island in the Bahamas might have seen a preath-mking sight. First he would spy a long thin line of pink at the water's edge. As he came closer he would hear a strange squawking, like the

constant gabbling of will geese.

Then, as if on signal, the noises would abreptly give way to an apprehensive allence. When the visitor came within 100 yards of the shore line, the rasping clamor and chatter would begin again, growing loader and budge, Stangaly countless thaning "jets" would streak over the water like a travering sheet of fire—thousands of gleaming red flamings beiling into the sky and quickly disappearing into a mirage-like horizon (pages 648-649).

Today man could comb Andros in vain for flamingos. He might see eight or ten stray ones shoot overhead in a V-formation and sweep out of sight behind the trees. But no ted multitudes. The grotesquely heautiful flamingo of Andros I was the same fate that made the ungainly dodo extinct about 250

Years agu.

Outpost of the Baltamus

Detaured for centuries, desolate Andres, 110 miles long and about 30 miles wide, lies naking in the white sun. Occasionally it is tilted back on its heels by a burricane guarting out of the Caribbean storm womb. In the years before the war the world had left fudges, largest of the Bahamas, to a few thousand matives who dwelled in wird-resistant hugging huts in the small towns and communities along the east coast. They exed out a living raising corn and recognits and tishing for spunges, conches, and spiny lobsters. Here also a few white men found refuge from a maddening world.

The interlor and west count of the island are unjudabited. For the most part, these areas have remained little known since the beganning of Lore. Like all of Andros, they are a conglumeration of hundreds of tregular land patches interluced by shallow waterways, some narrow, some expansive. Scrubby man grove brush covers the land. Dangerous sharks and hy-ripping barracula cruise the shallows. Morny cels, sting rays, fish, and

other marine life abound

Such wasteland and solitude was a haven

for the flamings (derived from the Latin flams, meaning flams). For years docks of them fed up the mellusks found in the san't bottoms of the salt lakes, mated and nested on the low, that shores. The flamings, which brought color to an otherwise drap scene, claimed Andres as its cherished and undefied home.

And, strangely enough, for the shy, nervous laming. Andres was one of its last stands—the world's end. Forty years ago the island, lying north of Cuba and off the scutheast up of Florala (map, page 639), had a population of many thousand flamingos. Feeling the pinch of encroaching civilization nearly everywhere else in this area, they prospered on the by-passed and seemingly forgotten Island,

but Andros was red servered during the list war by man and his technology. The big flamings sity found on Andros by the late Dr. Frank M. Chapman of the American Museum of Natural History, New York City, in 1904, was as surely a war casualty as

Leangard, Warsaw, and Berlin.

In the early 1940's, multary planes roated through sun-drenched Bohama skies on practice maneuvers. Pilots were at first perplexed by the sight of (morense vermilion patches which mottled the land below. More than once a young airman, bored with contine pattern dying, would bank out of formation, descend on a great mass of this red-pink coor, and give gleeful chase to the terrified binds.

When perhaps a balf-mile away, the pilot could make out some movement among the birds. Those nesting would rise uneasily. Thousands of ungainly black-beaked head-would periscape and freeze in the direction of the approaching introder.

No Protection-Only Hysteria

Rising from their nests, the birds would reveal a payrial of mad manner, bowls extending above the shallow water level (page 652), the center of each panetuated with a single chalk-white egg, rarely two. The air would well with books of taspy terror.

The wild flamingo, Phoenicopteros suber,*

* See * Large Worling Blacks (Hermin, Rises, pro) Harmage 1.7 by T. Gilbert Pearson, with paintings to Maj. A lan Broatks, Navennae Geographic Magazine for thee, 1912



Author and Helper, Invading Andres, Pull Their Dingby over a Bar

The Particle of the Street Control of the St

or all violation of its traditional broads of the most fragas. One of the most fragas to a rectic of litely the short of the most fragas and its nest for hand a large tradition of the trading menage of a large tradition in the trading menage of a large than he terial.

Such springtime groups of the content as were soon on Andros by these early airmen were recent articles to the perhaps to solve they had as the twinter matt. There had not be really because they preferred the solution of the social by their fellows curing this feather-shedding princess.

But when the regreeth of richly over 1 plumage had given each specify hody an elegant new dress, the normal call began to star within at Andros a fresh coup of small mollingles, believed to be the thuningo's sole diet, lay on the samt

In small growths the bites emerged on their winter returent e in distant swamps to make the ocean flight to Andros. Hying in gooselike formation, they entered Androsesa skie peering down in search of other earlier crivals of their species. Group the crivals of their species of the cold message with great farfare among those of early there has the old may be considered with perhaps half that many nests specifing the shallow lakes.

Here each year during April and Mood Van Carl ities would cone to With great wing thater and excitement the previously quiet show would resonand with the bediam of a thousand courtship does no quivering there as freeding, the beaptivering there as freeding, the beaptivering there as freeding, the beaptivering there as freeding there as freeding the and the arry by crooked beaks into cylindral and modes. And as a acres of such modes would be given the in a principle white and a page the interest of the modes white and a page the interest of the interest

the mail moluters, living the billion on the flows of the live, were abound the reason When a certain female needed for dash area from example of the living large at a set of the living larg



A Raider Course His Court, Plannings 1938, Herm Chucks, and Herm Canch. Right for the first hand the second colors of flaming damingers. Let was to be to be a second to be too days Andron's not the first have their feature for the first acting heron first, letted it fishly and unpulatable.

The male promptly ascended the mound on living and action in a street in a first on the region of the control of a sound have the control of a sound have the control of a sound have the control of the

Take-off -- Pale Pinc to Bright Red

the of the Land communities were perhaps in his stage of development when the first wordships a first coming over and cuthous pic to were held by the chimmering pink. When the sproughous planes were a

half taile or so away, speeding in fast and low, somethic within the essent scatter of the research transfer state of the area of the state of the area of the are

Then all the linds would take if only metanting at breaknesk speed, has stolen, through the shellow water, over the nests and across the lake. Wangs would hert with quantupling the apparent intensity of the color mass.

Som the momentum of running would be taken over by wing action, and a cloud of tirds would rise into the air, sumetimes



An Andrea Youngster in 1946 Gathered Flamings Eggs by the Hatful

The aight of Ladians enting flaminus shocked Spanish explorers. These plans men looked upon the limb

causing the palots to bank sharply to prevent a course colorion. The birds, which to the loss had seemed a pale pink when on their nests, wome, now appear gleaning red, with black wing-tip feathers alloking to the sufficient likes a real straiger out that has been problem. It sharp out that has been problem. It sharp out that has been problem.

for the cases. Her they want direct are the cases the flow want direct are the cases. Her they want direct are the case the flow's desappear lets the other end on the flow's this length on he are full Nature as would then once their places back on course.

liad the pilots been able to come back be a true and walk income the posts.

they would have seen, a I have, the devostation of last on eggs spelling their embeyonia contents down the walls of the manuals a devisation wrought by the stampeding Losoff (page 14).

total deep vilture would show that to address the flow that the flow tha

have on near-by New Providence Island kept the air in this part of the Bahamas 1 to 1 the sound that the delicate the size

bound so disturbing Bombers and swift pursuit planes—like the James—like the James gos, seeking privacy for the practice of sort sected maneavers—would spend many bours over the swashes and cays

there wasn't much flamingo activity on Andros, only scattered attempts to nest by a few honesick birds

Black Gold a New Villain

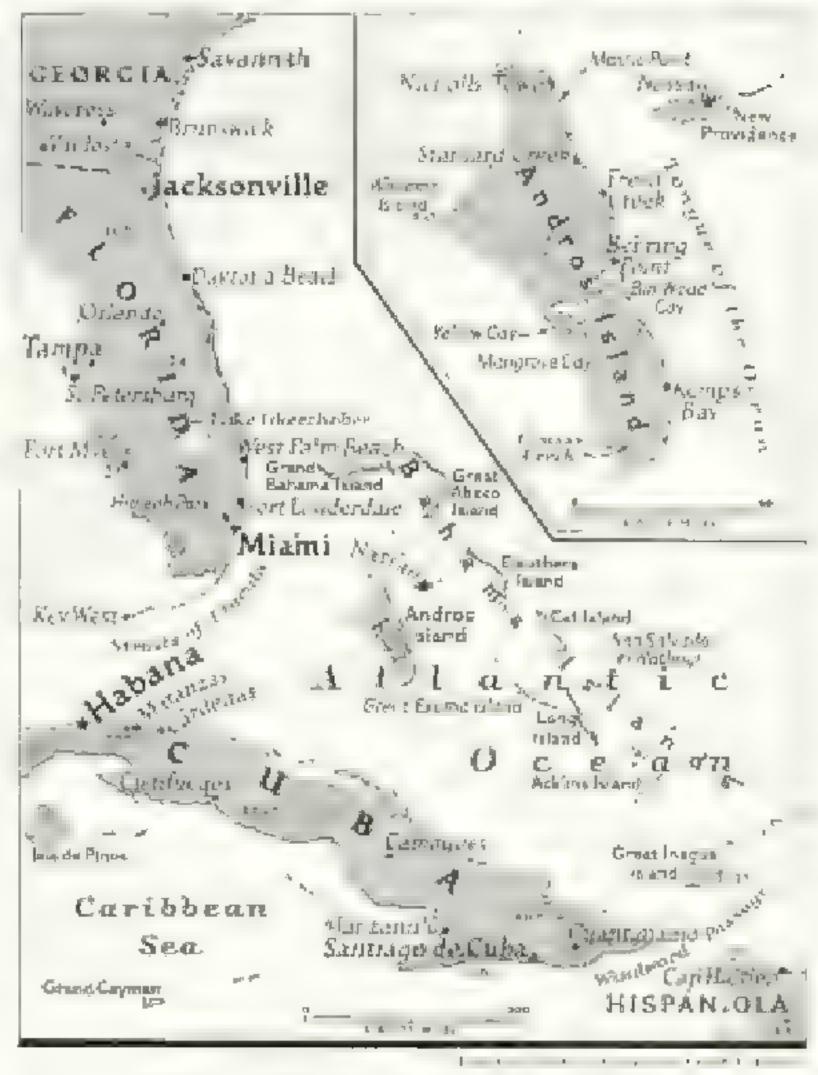
But the flamingus did not whelly forget Andros. At the emiof 1945 military plane traing began to fall off, and Bahama skies seemed relatively quiet again, Large groups of the birds started coming back. Perhaps the refugees could reestablish themselves in full number. The memory of their previous frights was becondug aim, and the impulse to nest and lay was beginning to reassert Parli.

By the spring of 1946 I found a colony of almost 3,000 birds attempting a return to the homeland, By June of that year, numerous new mountly poked

their muddy heads up through the water of one of the old rockeries. Impatient females began to set. White eggs appeared. All seemed well.

But the flamingos didn't know that the security of their mangrove lakes and swashes was again being profuned. They didn't know that all of Andres was under postwar suspicion of bearing oil; that elabatate surveying parties, drafting crews, and camps of laborers were being stationed at strategic points.

They didn't know that civilized man, who for so long had rejected Andres as a worthrest waste, was now taking seismic readings, cutting away the mangrave snart, and burning



Androva a Flambago Colony's Pillaged Poradise

Largest of the Britist, Enlastice in Amiron. Called an island, it is in reality several, channels shaing it into three main sections. Its purely swamps, forthodism to main, made ideal neutrick grounds a for helpfore flamences until low-flying wars planes and marguing egg hunters drave the blrue away.

out the palmettos, calling in engineering trews from London and New York,

The presumptive black gold down 14,000 feet was the thing. Harmingos belonged in Hisleah Park, near Mismi, Flachda, where a transplanted colony of flaminges thrives in sendcaptivity—not on oil lands. But the captive birds at Hisleah bave their wings clipped and cannot fly. In confinement they lose much of their tare beauty and vitality.*

One day across the bight came two Andros Islanders in a attle dinghy with a white butterfly sail. They had been searching for

*See *Flams Frichered Flammeon of Florida.* by W. A. Watte, National Communic Manager, January, 1941



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The Angle (1) 1 1100

nesting grounds. Having found them, they were now bent on mischlef. These men undoubtedly knew that on the Bahumian books there was a law forbidding the molesta-

ten of fluminges.

but they also knew that the law had schlom been enforced and that the watcher who for some prewar years had been assigned to guard the birds during the breeding season had long some been withdrawn. Besides, to them flamingo meat is more savory than chicken, and flamingo eggs a delicacy. The men understood nothing of conservation and didn't care.

As the intruders approached, the sentinel birds began squawking hardly, and a wave of noisy apprehension swept through the flock. About 1,000 feet from the nest area the boat crunched to a standatill. The men leaped overboard and with baskets in band proceeded through the shallow water on look. An obstear sutged over the flamingos; the birds streamed into the sky. Anguly but ineffectually protesting, they watched the nest robbers for the little boat with eggs (pages 637 and 638).

Overlocked Eggs Carry On Species

As the dinghy sailed away, the birds burriedly returned to their nests. Not all the eggs had been taken. Those remaining were mudged affectionately by the beaks of their purents, who quickly resumed brooting. Those parents who found their nests eggless seemed perplexed and frustrated. But within a few days they were replastering their mounds, and a week or two later there were new eggs.

Several times in succeeding weeks, as the location of the new tookery became noised about among the cumps and coastal settlements, other men, lured by the treasure of fresh flamingo eggs, came to raid the nests. Always, however, a number of eggs were over-looked. In these the race was being carried

n.

In most larger than were go to bell toppings. The brooding parents listened excitedly and waited. In a day or two fluffy white creatures with straight small beaks and short legs appeared on some of the mountly.

One wanders how these little puffs of down grow up to be grotesque flame-colored creatures with necks and legs each a yard long, and with great black hooked braks. It looked more as if someone had stepped some fettile goose eggs under the brooking mathets.

Before long, the young ones climbed down off the mounds and swam about in the water and regurgatated food for their offspring. As the weeks passed, legs started growing longer and heads and necks began to resemble those of adults.

By this time many additional eggs bad batched, and the water between the mounds was spected with several hundred young birds who aped their elders by stilling about on their growing legs wherever the water was shallow enough (pages 640 and 647).

Although the rookery had started out earlier in the summer with an acult populaties of about 3,000, many of these had somehow dropped by the wayside, perhaps worried

into flight by the egg robbers,

The remaining group had produced perhaps 300 young, although eggs kept appearing on various mounds to replace broken or stolen ones, or those carried off by an occasional high tide. If the colony had not been molested there could have been approximately 1,500 young. But even with only 300 new damages, there was as yet no serious survival threat to the coluny.

New and more deadly troubles, however, were soon to begin. The egg robbers had been watching their casendars to calculate the probable batching time. Just before the young were beginning their first flight exercises, the dinghy with the white butterfly sail again appeared from across the lake. This

time there were three men

As they approached, the Lirds began their raceous alarm calls. Many of the young descended in panic from their nests and began swimming toward one of the corners of the lake.

For a time the adults held their ground with the nestlings. But as the invaders came closer, all the adults took off. They circles overhead and watched the predators go after their helpless young.

Last Roundup for the Flightless

Nature again had faded to provide either parent or offspring with an answer to this dangerous thlemma. Each from a different angle, the men spinshed barefout toward the cowering group of yourgeters and succeeded in driving them into a small estuary. Older fiedglings were furiously thapping their wings in a your effort to get into the air.

The men began the assault by throwing stones into the group. It was hard to miss. When an effective missile landed in the group, there was a wild scatter, leaving one dead in the area evacuated. But this was not efficient enough; other methods must be employed.

By now the men had succeeded in driving



Author and Helper Seek Flamman in a Belianna Wasseland

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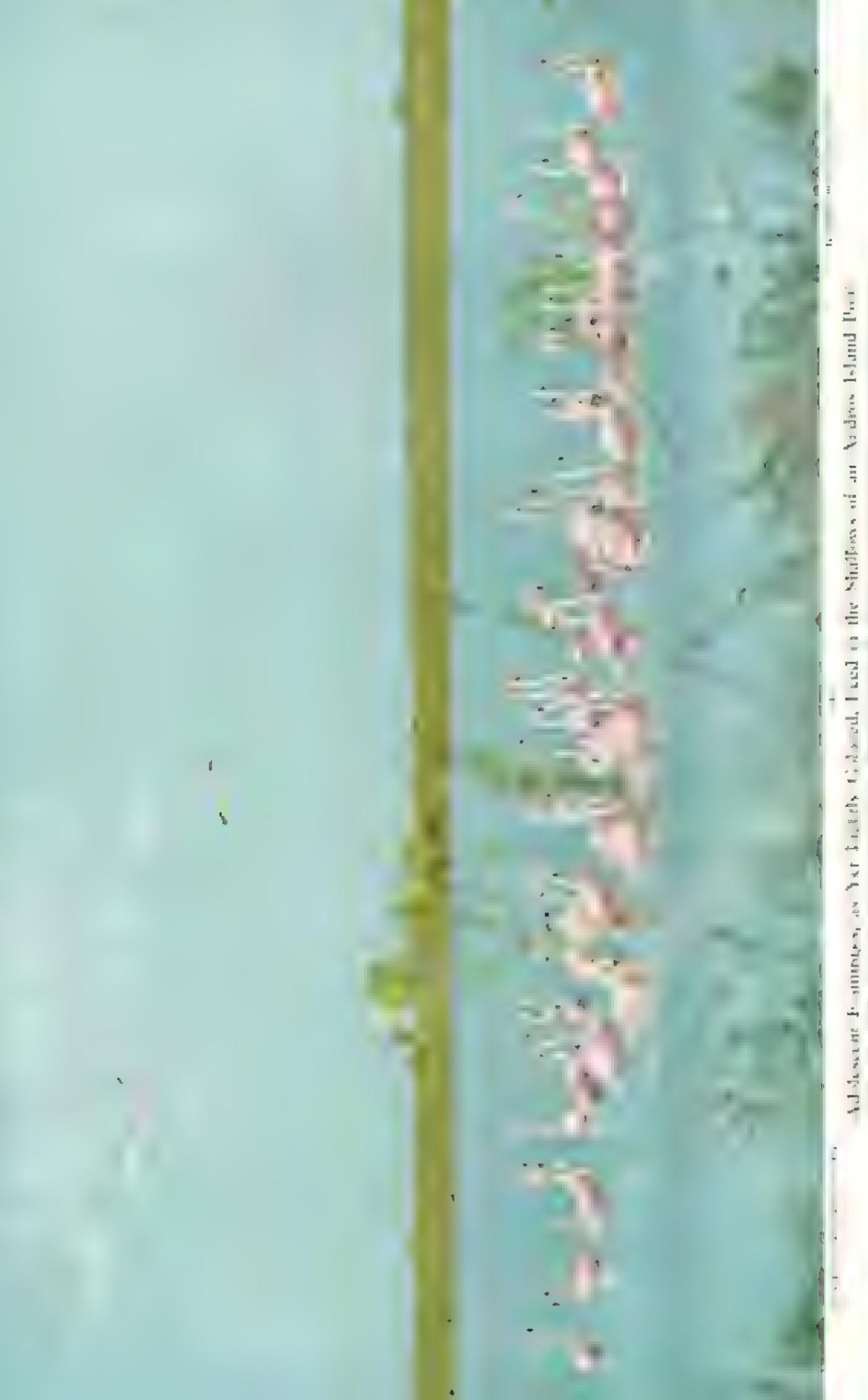




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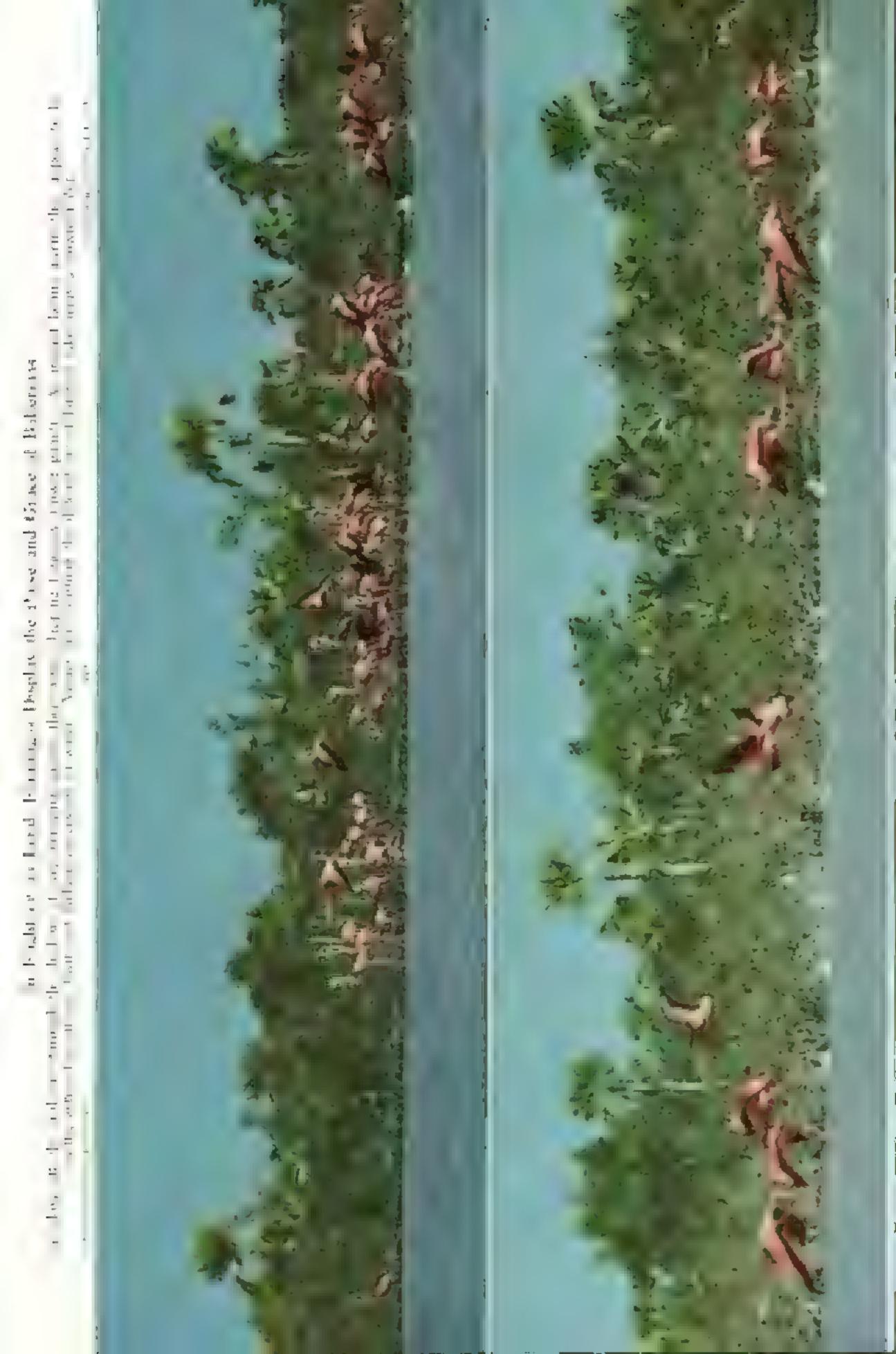


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the young out of the water and onto a san ly beach. Here the birds were doing better for themselves, being able to outran the invaders. But then the final craftiness of the spoilers asserted itself.

One of them get on the fat side of the group, to present the birds from fleeing farther onto the land. The other two, standing shin deep in water, untwined a ball of fish line. Flach man carried one end and was separated from the other by about 50 feet. The frantic whiles still wheeled above, flashing red and screaming widdly.

Helpless Young Trapped

Suddenly the two men with the tunt line held low between them began to run, faster, faster, splasning through the water, drawing the fish line about the group of quivering young.

Some jumped over, some darted under, some can before it into the brush. But others, especially the larger birds with legs beginning to grow long and awkward, were caught at about knee level. But legs broken, these

pitulal victors feld

When the men had finished their assent, perhaps 20 or 30 disabled birds lay on the sand or fleated on the water. The men leistrely picked up the young damingos by their fractured legs and carried them back to the dingby. Nor did they mercifully kulther wounded victions; they destay from homer. It was a long trip, back to the coast and camp, before the birds could be killed and cooked or cut up and dried in the sun for later use.

When the dright left, the adults lambed again and the surviving young elept back to them. Adults to whom my young returned paced abdously. In a few days these lonely mutiners left the runkery. Time had run out for them. There was no use trying to ay a new batch of eggs. The harritaine season was imminent.

Coming In for a Crash Landing

Jae remaining family groups, apparently soon (orgesting the shanghter, continued with the business of completing Nature's mission. Within several weeks, sone of the years succeeded in gelting into the arc. That was easy. Merely fun as last as you can and flap your wings with everything you've got, and the principles of nevodynamics will do the fest.

But landing is quite another matter. The young hoticed an adult gade smoothly in for

a landing, its spread wings filting gently back and forth (page 649). Then the landing gent is slowly lowered, legs extending down and a little forward. When the webbed feet hit the water, the hird starts running suplify, splushing through the shallow water before coming to a stop.

When the offspring tried it, there were complications. The delicate balance between wing and log movement was something to be learned only after long practice. The young would often lower their legs too soon or too late. Inevitably there would be a crash land-

ing and a dip-dop to the water.

But it wasn't long before the youngsters were flying off with adults to distant bights to feed. They learned to take a position in V- or angle-line formations, to sweep low with the group and skim the water with their wing tips. They learned how to find beds of Cerishinas (inch-long, spiral-shaped molarsks).

Feeding Birds Use Beaks as Sieves

The flattingo feeds both by day and by alght (page 640). The bird plunges its head into the shallows so that the beak is inverted and pointed backward. Then it gulps a mouthful of sand, the white snaking and tinsing its bead. Water and sand are strained out through a grill arrangement of the beak's inter a lages. Mad take too large to passill rough this grill are retained and swallowed.

Feeding in one spot at a time, the flamingo slowly pivots until a complete circle has been made, during which all mollusks within reach have been cleared out. Then it moves on to another spot and repeats the process.

Each former feering station is recognizable as a shallow mound and more left in the sand. The author, wading through shallows, has

such boundards of such feeding scars.

Normal living, however, was not for this generation of Andrewson flaminges. It was early one morning in September that final disaster came. The plak mys of the rising sunwere showing the clouds up off the eastern horizon. The lake was blue and quiet in the morning air save for the latenation of an occasional flamings wrice.

The block had not seen the dinghy approaching, for it had come in under cover of darkness. Suddenly a biasphermus explosion shattered the peaceful quiet. Instantly the birds screamed into the sky. Several, their delicate bodies pierced by guashat, did

not rise

Their came another shot, and another, and yet another. Each time one or two flamingos planmeted down out of the flock like clay



Flamingos 31 Years Ago Erected a City of Mud Tees as Their Nursery

"Multiply these the most by a thindwest way the mather of Jack will have some sick of the colony in the beather" elected a nested and seeming in a transfer of Material and a complete for the base for the Armster Puester puester of the late of the Armster puester puester puester of the Armster of the Armst

pictors. There was one more shot, and with to the circling formation abroptly wheeler, and swiftly flew the south. In a few seconds the religional had disappeared over the horizon.

All was quet again. Red and black deathers were gently falling in the area as the hanters came in to gut see up their quarry. The few birds not old enough to fly fled into the mangrove, where they und sabtedly starver in were pucked up by hawks. This was the final outrage. The flock never came hack.

Survival in Great Insgut and Yucatan

This tappened in 1946. A year later I retained to Andros and spent five weeks searching the entire area in an unsuccessful attempt to relocate the flamingos. Sometime Lefore my arrival, a flock had fet word to the Grassy Creek rookery, only to be routed again by the fillot of a private plane who had spotter the birds, and, like the military airmen of the wor years, had flown in close to get a more intimate view. As in previous years the terrorized birds abandoned their nests and swept into the slay

As in, in 1949, I returned to a cros, this

time in a reconnectionic plane supplied by the balances (Sovernment. I flew the work and breadth of the great island, searching for pink patches on the blue and conerald be but in vain. The hirds had not re-

A number of the displaced birds went to the east Inagna, some 300 miles to the couth east, a desert island not quite as large as Andrew Int otherwise sendar. Report of Analy 1971 in sted there were as that is a 1971 in the Great Inagna, 2,000 in the court of Hispaniola. It was absolved that there was a colony of 3,500 birds nesting on the court of Yucatan, in southerestern Meson.

Such a bird as the flamingo—like the dock and the Florida spoonbill—has been up so specialized anatomically and psychologically that adaptation to always changing constitions is impressive

With the protection of the College distributed and the Vicatal way places as Great Imagina and the Vicatan crast, places where security may be found from inclostation, fetrou, and the threat of eadden depth.

I Walked Some Irish Miles

By DOROTHLA SHEATS

With Illustrations from Photographs by the Author

TN COUNTY CORK, where I came ashore, the analysis of the main branch of the ten perate field Stream. Listen and you hear earthe lowing. This is the sound of Ireland's countryside.

Time? Nobody seems to care,

'Clocks stop ticking here. No sody hurries. Any Irishman well stop for a chat or a pint,' said a little fat man in a Glengariff doorway. 'Sare, we're rasygoin', praise be to God'"

I had just eight weeks for "going back" to an Ireland I knew only in song and story; my grandparents sailed from there to America be-

tore I was born.

Alax, no weeks in my life passed so fast I walked 250 miles, it de in curts cars, buses, and trains, slept over "pubs" and under contage roofs, are in Irish kitchens, stayes on a farm, worked in a store, danced, talked, and went to church with these friencly and generates people. I emboted a fairy fort in County Kerry, stubbed my toe on an Ogham stone, and climbed into damp, ivy-covered castle ruins in County Cork.

Often I met the old and the new, like the humble thatched coffage near Galway where daughter Peggy—showing her chickens out of the door—was soon to enter University College at Dublin (Baile Atha Cliath).

Friendliness greeted me everywhere, and

1. 3 What brings you to bretand?"

About the size of the State of Maine, the island has 32,000 sippore nodes, Sec of its 32 Counties toake up Northern Irekorf, part of the United Kingdom. The "Border," subject of dispute in and an older separates Northern Irear Irea to the maining 26 Counties—the new Republic of Irekorf chap, page 656). Ulster cannot be used to a synchym for Northern Ireand and three Counties of the Kernbla.

Most of my cight pire bugs weeks were spent in three Courties of the Irish-speaking West—

Cork, Kerry and Galway,*

Irish Mate-"a Male and a Bit"

In the worthwest I storted, as no off-the-beaten-roack pass usual, locally known as here," in County Cirk. You leave resort-town Globeard beland and stabledly you are able in craggy, wild country, with the bleak

Cahn Mountains to the right and Bantry Bay,

gray and misty, to the left.

The ten miles to Adrigule, where I haped to get 'bed and breakfast," seemed endless. I knew no one, had no reservate us. Comeros at a pack with supplies for a week dramed at my shoulders. Each time I inquired for Adrigule, it was still 'a mile or two."

"Don't you know an Irish mile is a male and a hit and the out is as long as the mile?" asked a tall, grinning Irishman I met when

at last I teached the clusive town,

'You mean they're lunger than other miles?"

"By about 500 yards! "

Adrigule is just what its name in piles. A Place between Two Forks," with a small I about Louising darkly near by is 2,251-foot Hungry bill. For three days I lingers I here, at a till friendly stone guesthouse. Floors were coment, walls white.

Seat of O'Sallivan Class

As evening fell, a waitress spread a blue-and-white chith on the table and brought "tea"—ham, tomatoes, loaves of dark and white bread shaped like small cartwheels, and a knile to cut all I wanted; creamy louter, black carrent jam, ten.

The girl came back with an armful of farf peat, we call it—traditional frish fuel. She uper ded the promish-dack oblongs on the hearth. Soon I smiled the sweet, almost but leny fragramse of my first turf fire.

"How quickly it Eghts," I said.

"Black is sest." She spoke so her in musical Cork cademe I could bacder understand, but I did learn that her router once end greated to America, only to return to marry a childhood friend. Her name was Margaret O Sallisan. (Here, if you forget the name of the man you met yesterd iv, you can goess it's O'S illivan and you'ls probably be right! Bere peninsula is an ancient seat of that claim?

I picked up a bit of turf. It was reliber soft coal nor hard soil, but I ke a solid missage of both, with grass changing to it. That morair a I had passed it stacked in desolute ougs (pages up8, o74, o77).

A young torremnent cark from Dublin,

*See, in the Namowak Go says. May a Trelant The Book Whence I Was Hewn "In Thomas Byene March 1975; and "Off freinal Mather of in the ." In Harmon Howell Walker, May, 1940.



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"But talay," I said, "so many women, are one frelia. Why subsit? Hasn't the tre emphasis set up a program to make them is track to bure ato will be."

here as it America that is congressive thirty years." He wrote some Gaelle in the notebook. "This is an Irish saving It mean Little by hitle, cursos, a local

Grelie Revival in Schools

We talked of the Government's efforts to revive Gaght to be it a last the state of the control of the line of the



Gowing Feat Mikes a Country Kitches as "Warm as a Thrush's Nest"

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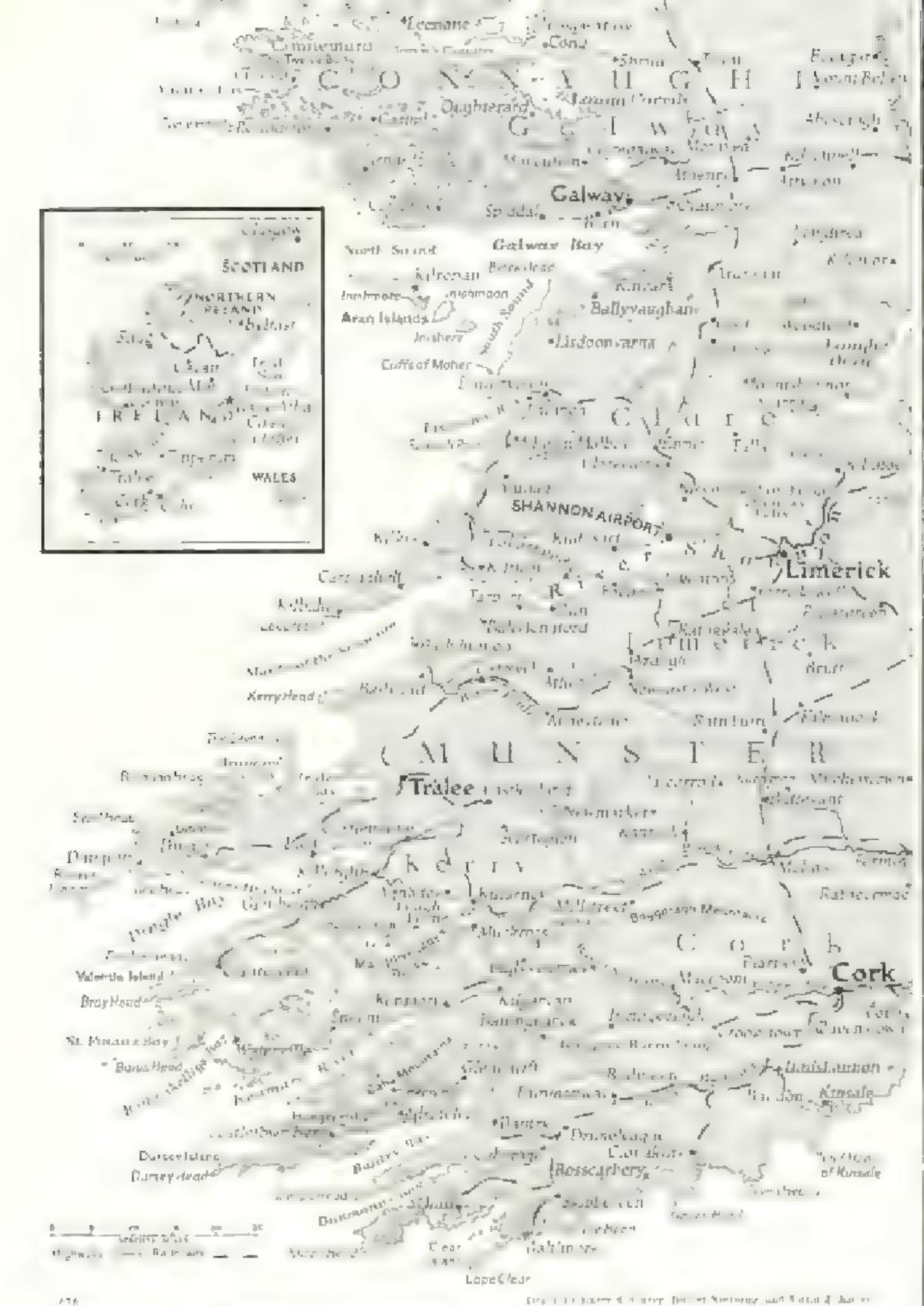
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M. J. Not Industry, Losey Florid Life.

I we stake the property of the late of the

relatives in America or England—gifts of clothes, like smart American hars I saw on colleges in church, or American dollars. One post-office clerk said many a sizable check is cashed at Christmas time.

Farming is limited; rocky land makes only patches cultivable. The mobile creamery, where cream is sold, and the mater raid are two marks of progress on this peninsula.

"Life is hard. That a why so many your people leave for America or England," I

ભે**માં** એમન

I isked him how they learn about America.

The wireless—radlo, you call it. Even back in the gleps you'll find wireless. One in a family goes; then he writes hame, sends money, and cetarns in a few years to take a brother or sester out with him?

Before I telt Adrl, role I hiked four miles up to 1,084-foot Healy Pass, where County Cork meets Kerry. I walked past turi carts, nelds of turnips and calibages, through a lonely villey. I get to the pass in a violent thunder-street and buck led under a rocky ledge to

wait his the summer,

For ten billy miles to Castletown Bere I meet a stift southwest wind. There were no billboards, only a rare crossroads contact. By thout I had tied on my bat with my minerat left, and farmers, pushing their bikes in the full force of the wind, shorted "Tis wik!" Even the sheep and donkeys hugged bushes to escape the blasts

Hospitality on the Road

Extraming of a cup of bot tea, I knocked on a farmhouse dury,

Donald O'Neill, owner and poultry larmer, passed in his work on a new barn to bid me welcome. The kindly woman of the house set out the chian and served me ten

soon I was out walking west again beside a

pretty frish girl.

"You re an American," she said. "I can rell by the clothes. I get packages from America—this suit came from my a mt m New York."

"Would very hier and American his and tell of entirements leaving for an important highest take and dishes. I be were shind they could not even leave the digs behind."

water shrupped at a Government calletin water is futures to spany against picture than a picture and lightning makes it turns 'em line and they went boil.

The coast of town of Castletown Bare was full of Spenish sudors. Into its fine harbor twenty-eight ships in a fleet of Spanish trankers had been forced by bud weather. I turned into O'shea's General Supply Store, on the square, to have the fluent Spanish.

There, dackened and stainen, on the wall was a 1937 National Geographic map of the British Isles—friendliest sight imagmoide.

Fishermen talked fastily. Kegs of Guinness stout stood on the floor. Shelves held kellogg's Corn Flakes (packaged in Ireland); consult "Stoned steak" (frish product); contest of the beefy log tens of Jacob's Liscuits.

Actors the street at a leading library, for fourpence, I could berriev thristopher Mar-lev's Human Benig, or Nancy Wilson Ross's The Left Hand Is the Decamer. At another shap such American pulps as Western Story and Trans Rungers were for sale, Leades Inglish patterns for sales and extensions.

It is brown are good workers. They go to America with only a national school education and then go to night school to become chiefs of polars, mayors . . ." a woman in a

candy shop told me proudly.

"A [fundred Thousand Welcomes]"

She let me have a worn copy of Old Moore's Almanac, In it fairs about 151 of them, were listed for the second week in August. One was for A Borgion in County Kerry, and I knew I had to burry to see that I uck Fair.

From Castletown Bere, through tunnels and over mountain tout, I went by but to Kli-larney in County Kerry. Then, by train, I covered 25 miles to Killergin and Puck Fair. Simily no fair was ever like this!

"You'll be after wiewin' the only reignan' manch in Fr.n! The radioad station agent

whispered when I longit my ticket.

He was right! There was king Pack, a well-fed allly goat perched above the consider scarce on a scaffold. I stared up at it and then down, just in time to let a horse parace by as his owner paraded him for sale.

three comes Gathering Day, when Puck is mounted on his tirone with much merrymaking, to repain there boulded and tethered through Dispersing Day one, the last, Scattering Itay. The Gaelic greeting, "A hun had then sand welcomes," fluttered below him.

The origin of this famous fair stems from legen, and history. One tale is that goods warred the Irish patriot, Patrick Sarsfield lying in and ush near Tipperary, of the approach of William III's men, but often the celebration is linked to the dim pre-Chrystian post.

Scotts, likers, Irish families, cyclists frovers in heavy routs and boors, English torrises, a limited about, spilling out of shops into the streets to buy or self horses, eactile.



Buder Leicester haves Mire Anxions than Sheepish, Amost the Amsinneer in Mallow to the second of . It is the better my term in back taked 8 to a fine types of a

pies the ent to take a ticket on a game it, . . I was a garling a , . . Y a if was The state of gally denotated regard, not reing the riggs then ill over are the first of toward one of water

Who were the traders' Lary but al like I have go

There will have my terretally more living ' M son don't ches them!" 48 | 1 to 71's | 1 to 1,

"This Wish Will Come True . . . "

I put half-a-crown or the pair of a leeweled sung tinker. But a pretty collecthe life trains had taken at under her wing * 1 - 3/0 to 10 D No to I shapefule for bereget balayan, home on holeas from Limiton where she worked trough a es a from the tawny tinker, who can be and the me change later (page 678)

Year had a long journey," the little war so equal to the strong, "Arn'll and a distribution of the state of the state

हती एतेल सम्बन्धः ="

We start the start of the start tre tabler told mu Tor ther trill groups another wish-only this one will come trim

to a the consideration of the in accurred by ign and a suited You the form of the state of

beland bas its own currency system, but it also uses british pounds, shillings, and penu-

Be a fire there at will rein the the top lank to Killarner was to e bring that New York subway rush Sasteen ; in Contrast ; a are - 165 compationed | An is then were she gwrang chibhren a w bow in block in the Insh-American war and I call a territorial constraint the States for grant for the Car will termier, little test of the district, pl right last were in the Large of the trang general in a pare also were far diget who saw the fair with me and a tinker and its tired with

Between pulls of a buttle of "Wood ecker Cultural the tinker same loss ballads a detail,



The let ht - a terreett in Labor Levely Lows & Smill South



treather the Orinne of Granis September Kin Section of Beree She and

sweeping off his cap and shaking hunds all around after each verse! His wife plucked titelessly at the three remaining strings on her banjo. When the ballads were sad their eyes grew misty. She smiled apologetically as her voice gracked. "I we been singin all

night," she said hearsely.

So anxious to see Duck Fair had I been that kil arrey and its famed lakes in the hispdom of kerry only now seemed real, Joining English and Irish tourists, I took the day-long trip through the Cap of Dunloe in all its varying beauty of mountain, lake, and wooded glens. On the first lap I chang to the side of a jauntting car i symbolic horsecart of Ireland), negotiated the next lap on horsehack with camerus ilving, and covered the last in a longhost, manned by strong men and trie who spun endless yards of Tir na n-Og, "The Land of the Lyer Young,"

I Follow a Funeral

The sun beat down on the narrow streets my last day in Killianey. A freekle-faced girl stopped me. "Ho you know where I can get a passport picture made?" To be mistaken for a untere was pleasant, but I had to admit I was "from over."

She was 17, going to England for an interview about a position in a bank. But it was

Saturday no. no shops were of sed.

As we talked, a functed procession silently came around the corner. Shoulder-to-shouller, many walked beside bicycles, following the bourse; cars came last.

They'd stop at the top of the town, my little friend said, so I went along. The pace was

fast.

I had checked out of my toom and expected to take the train for Tradee. But the cortege left bull arms behind. Four miles away, at Aghadoe's ancient harving ground, they laid this brishman to rest, the Lough Leane of Killarney blue in the distance. I missed my train,

The remains of a round tower, an early defense lankout, and a church perhaps of the seventh or eighth century, were alose by. As I walked around, fussing lettle wagnals to the land to discount of the ending lettle.

Aghadoe means the "Field of the Two Yews." The yew tree was held sacred by ancient Druids, and to early Christians it

syn bolized eternity.

The next train went east to Mallow; I took it. (Somehow, tehere I was going didn't tratter; it was still Ireland.) The way a Corkonian can pronounce Mallow is lovely unleed

I found there a prosperous farm town of 5 000, a railroad junction, and a supar-beet

factory. Leaning on the bridge over the River Blackwater, which flows through the town, I watched red and white cows, kneeders in cool water, gaze leisurely at small boys saying sticks from the banks.

All around, rich pastures rolled over a pland

and valley.

Fen in a Momestery

Next morning sheep were running down Mallow streets for the fair (page 659). I watched them from the green lawn of Patel-cian M mustery premude. Just then a fall, white-haired Brothet of that order greeted me in Ebulish and invited me in. "Sure, it's not right to keep you standing out bese."

Inside the gray stone building this teacher of Gaelic let me read his thick scraphock. Clippings went back 15 years. Their theme was farm life, even its humourus side.

Thange was not easy, one clipping said, and tobi of Katie who tried cooking a small tag of bread crumbs with cabbage to absorb odors. But when her new husband found the hag among his tablage leaves, he thought it was a chicken's craw, stalked out the door and never came back!

"This strapbook is a holby of mine," the Brother said. I asked about the children be

taught

A smale brake over his ruddy face. "Children don't want to work, now, do they? Any chiaren, isn't that so? But Ireland is a spiritaal country, not matarialistic, as is so much of the world. Isn't that what you've found?"

He gave me an apple and his blessing and

bade me goodlive at the gate.

Fermoy, in salmen-fishing and hunting country on the beautiful Blackwater, was just

18 miles away,

There a ballad singer, dark head thrown back, filled the air with his song. Finisher, he harned in and out of shops building his cap for contributions,

A Mound in a Field

In Paddy O'shea's radio supp I listered to the story of the Fermay Field Club, an amateur archeological group. "Tis a kind of madness," said Mr. O'Snea, in his rich brogue,

One day he and a friend had sat down to ent their limits by a mound in a field. He had paked around with his trench tool, made a small opening, and saw just enough to bring them back. With help from University of Cuta's Prof. Michael J. O'Kelly, they uncurrhed an apprent urn burnd and food vessel. (I have had news of Paddy's death, some say it's not considered linky to guide a "dag" in burial mounds.)



Young Adventorers in a Rowbont Last de l'as Martinge World in Cark Hurbon

Lite Some Age Some, splid compared on the Land of the Land Some Are were significant to the significant to t

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Charles the reason of the white with the property of the same and the property of the white with the property of the same and the property of the same and the sa

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Land Changes Men's Lives

It believes and how are not been when in some is some and the control of the cont The the land decides it," he said. "To the east of Maritant, land is good, farmers live well and work hard. But to the west, in the brownstone country, rocky and poot, cows, chickens, and sheep are the crups. There's plenty of time to chat. Nobody's in a harry. Go down to Macroom and see the land that changes men's lives!"

I went by way of Mallow and Cork City, Often I took taxis just to meet those irrepressible Irish drivers. At Mallow I had met one who refused payment. Fie would be watting, he said, when I came through again. I tried to tell him as the train pulled away I would probably pever be back. But again in that same station I saw him, sweeping his hat off like an ohl triepd, offering me a ham sandwich and a glass of orange crush'

As I changed from train to bus at Cork, a long bean that driver he ped me with my suitease. I told him I wanted to stay on a turn. Visibly that disputhed him, "If it's a farm, now, where you're goin', don't be expected facilities!"

He told me of three elderly ladies who refurned to a near-by farm after 27 years, but staved only a weak. "Lock of facilities," he

concluded darkly.

Macroom, important marketing center, straddles the River Sullane. It lies on the fringe of Cark's creamery district to the east tip the west is the Iroh-speaking Gaeltacht (page 654), where old red sandstone ridges, "brownstone," pile into wild mountainous landscape, almost unylekking to any plow out host to east each and black-fixed sheep.

"Saving the Corn"

The whine of a trainer rose and fed in west Cock as I was hed Macroont. "Saving the corn" means betweeting in Ireland, implying the strugge in wresting the gadin from the weather.

Lateness of the on p makes outs the most reflicult grain to "save." but now, gift of the fine 1949 summer, the golden outs stoud in "stooks". About eight sheaves, with one at each end tied together with "sugan," or rope of twested straw, made up a stook. If weather was good and the grain, hardened properly, it was "ornwn in" to the haggard topen area between bouse and harns) without stacking.

Two men led sheaves jut a chresher on the Michael E. Murphy family meat Machaen.

And the first transfer of the first transfer.

Additional regionsly from the field.

Mes placed frequently to tap a keg of porter or stont—traditional convivid phase

of "saving the corn." Often a barvest dance

by the time they pay for the porter, pay the thresher, and feed the helpers, the profit is not so great. Someone said. These was an air of industry about the scene; work would continue by lantero light until it was faished.

Thirty men, traiting chaff at every step over the flowered carpet, are at Marphy s. Everywhere was the sharp, then smell of fresh oats.

Irish Kitchen-Warm as a Thrush's Nest

Later I say down at the long table with the other women. We had "hastible cake," numer for the three legged from put in which it was locked over a turl fire. Bus of burning tutl on the heavy lid made an oven of the black kettle (page 655).

A movable from crane suspended the potover the whitewashed hearth. A believeshke "fire nuchine" feel air into the flames at the

turn of a hundle.

On the wall a clock ticked hasiy; a dog curied up on the wooden heach teside the hearth.

"I'd like to be here in winter," I told Mrs. Murphy, imagning how strug that kitchen would be on a dark night.

"It's warm as a thrush's nest," she smiled.
Ivy-wrapped mins of an old castle dominate
Macroom's market place. Admiral Sir Wilbart Penn, father of the founder of Pennsylvania, once lived here, Lat today arches lead to a move budget and garage.

On market day in the while square I wanted a woman in boorded clean sell the last of her apples and term into a chemist shop, she bought tonic for the pigs, salts and face cream, then turned into the draper's to purchase five yards of tartan plans for shirts

"Ah, yea," agreed the girl behind the counter. "When non-sell animals on purket day, they put a reli of bills in their pocket but that pays big detts. Wemen spend their budgey on the farm or themselves, and that

helps us."

beyond the briage I met a housewife who remembered when she came as a bride to Marnoom. Then, as she swept or baked, she would sometimes be startled when a face appeared at the only window to the room, I haking the light. Angrily she colored one "peoping I om," to have him admit that there were only these tholes in Marnoom; one in a pade—costly to see; one at a distance—too far to be; and one on her wall taking the main street. He was bonly after seon' the time"!



Gallieus Centory Has Brilland Marist Since S. Patrick's Time. 13 Centra acc Ago.

I stopped with Mary and John Healy on a small farm near Macroom. Cows and a few rolling acres occupied what time was left each day after John coherted eigh from near by farmers for shipment to England or sale to Cork City. The house was nearly 200 years old.

What does an Irish brusehold do on Sun-

day?

It tures the wireless to hear the big football match—Cork ve. Cavan! The broadcast came from Dublin and was sprinkled with O'Reillys Murphys, O'Keeffes, McGraths, O'Donnaues, and Cronins!

One warm summer evening, eight of us sat around the Healy katchen, enjoying a gathering for storytelling. Neighbors dropped in one by our, taking places on the settle, the kitchen chairs, the settle.

Mickey, a brother, turned the pages of an allow of yellowing photographs and told of his days near Delhi with the British Army.

"I'll Ne'er Forget Old Ireland--"

Ella in a high, clear vaice began the song, "The Irlah Emigrant"—

I'm viture on the silie. Mary, where we not side by suic.

On a bright May morning, long ago when that you were my bride

We listened in the lamplight, hashed, as she

They can there's bread and we k for all, and the sun shares always there. But I'll ne'er larget old breamd, were it fifty tunes as fatt . . .

About it there was that basisting quality that come through so many lines sough

Mary Braly excitedly told me the house had been "incasured" for electricity. Ireland's Shannon Scheme in 1925 first harnessed the 100-foot fall of the River Shannon between Laugh Park and Limerick. By 1928 there were 50 000 users of its electric power. Not long and the expanded plant's output reached \$10.639 users. Some generating stations use turf as fuel.

"What will you hay first after the lights are turned on?" I usked Mary as she waited for writer to boil.

"An electric teakettle-from Cork!"

But 75 percent of the community must agree to buy electricity. Here only 40 percent had accepted, the remainder declining because of high rates, or because they had a ways managed without it. But not jobs

"It's for the future," he said. "We might have an electric milking machine some day—God is good! And if we win the Sweep—an electric pump!"

Walking west of Macroom, I put my pack down on a big rock near the River Lee. A dark bird with white waistroot and a bit of a tail skinned the water. It was a dipper, or water casel, and bounced up and down on "rubber" knees.

Next vil age was Ballingeary. This was "brownstone comotry" where, as Paddy O'Shes had said, farms shrank and "saving the com" was only a three- or four-man job and where cows, chickens, and pigs maked high as farm produce.

Buck to School-in Guelle

Greeting here was in Gaelle, "May God and Mary bless you," said one traveler. The other returned, "May God and Mary and Patrick bless you!"

In 1904 the first frish-speaking college was established at Ballingeary. I attended a seminer class there for young and old in a modern school insiding. At one point some 50 lays and girls brake out in unison, reading about from the blackboard in Gaelic.

The schoolmaster told me later it was a well-known poem, The Vellow Bittern, cultisting a lonely kird which had died of thirst. The pact, who was overfood of dritk, points of that thirst shall never cause his death?

The colli, or tols dance gathering, held almost nightly in the big Ballingeary college hall was part of the trish sessions. Small boys in knee pants and striped jerseys and latteries with braids mingled with oldsters, scuffed and swang, skipped and stepped, as a meladeon whipped off one time after another. One was "Yankee-Itmulle"!

I said no when a tall lad asked me to dance. But a determined eight-year old came up, told me to follow him, and off we went into the haymaker's jig. (Lucky I was: it was like the Virginia teel.)

I stayed in a big house near Ballingeary with a dozen or more Itish students from all over Ireland. We explored the staggy ridges, full wed the Lee near has mountain source above Gougane Barra lake, hiked by moutilight to Irish dances, and had "singsongs." Once we went to a Gaelic football match.

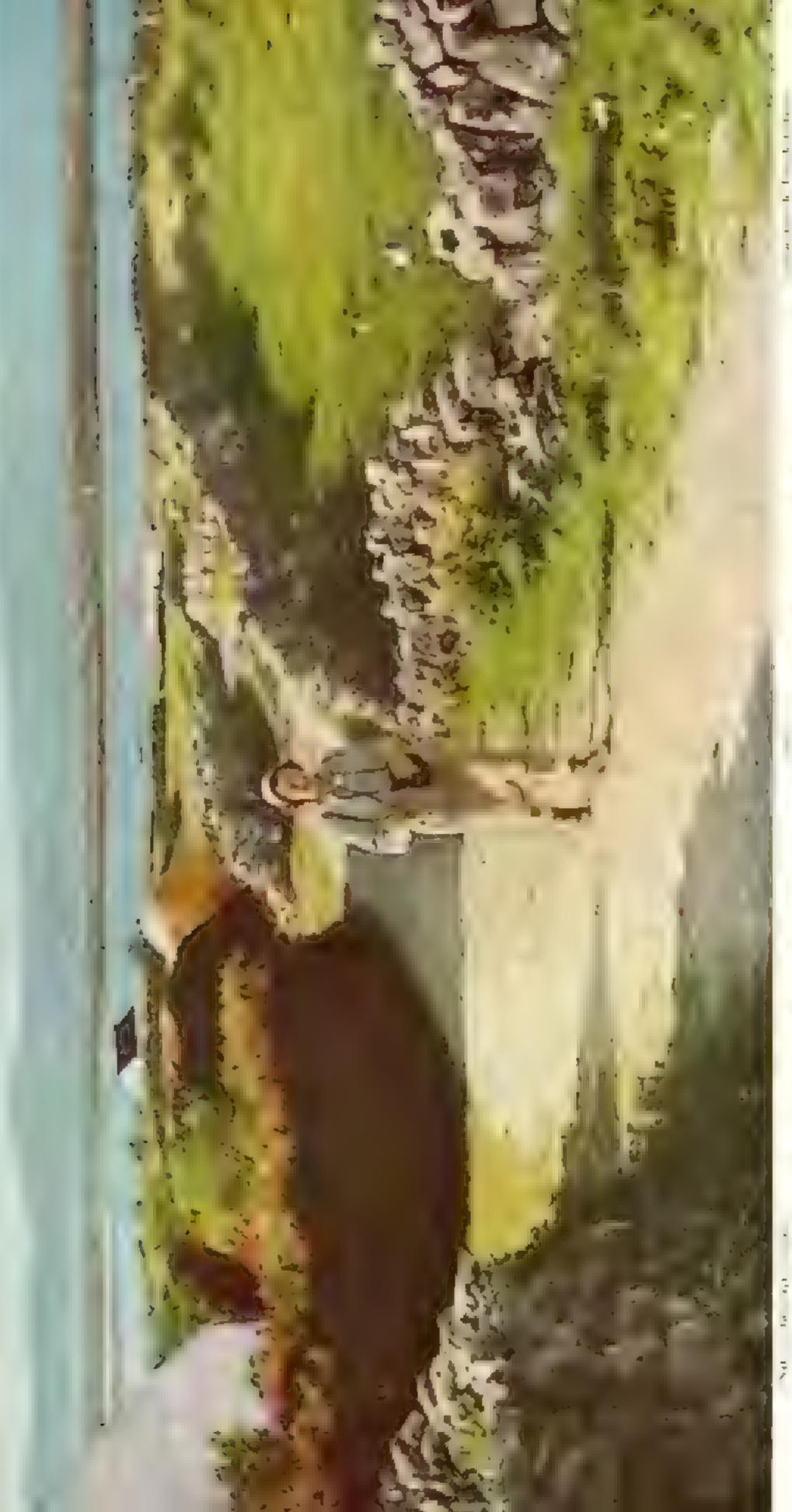
A big red truck collected the team "Michael, come on Sean, to the match!" they talled.

One by one, players clambered in until 15 men, the Ballingeary football team, bumped along with six girls—all sitting on chicken emter—bound for a match with the village of Im higherlagh.

Ref re the 10-mile ride through mountain and glen ender, cleated shoes and blue-and-gold jerseys come out of a battered suite se.



Atlantic's Grinding Tides Underwine to Lancetone Since of Jectorie Arms Islands
The continue of her trial lines in a lander to the ment About 1665 remain 1 and 1
have been to the continue of the first and the continue of t



The Anthon, Walker & Seak for Hand, Trudges Between to mity Cubruse Sound Single for the first tempt of the first of the formal of the start of



are Then large to Blideses they be build annie Cartagla Hardy Man beforedors that on a Cherry's Sea, T



helicals Gypavian Imbara Never Settle





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Ked and Parac from Beat I miles. It was from them bear. Part Jan teles from Mattery other than the state of the state The selection of the periods In he of the H to the to A Second Land In- III Naturals Oat Dres. Green Corns from Mars.





* To a kerry Turf Bog Goes a Pony Cart for a Stage group Load of Pust

Dunctin's Stone-fenced Farms Drop Dwap 5 the Sta



We arrived in full strength, if sixty manues late. Ballingeary practiced two hours, but finally fans left the fiest. We went home too, securise the team from imbigerlaph never showed up.

Hut nobody cared, Homeward-hound, Michael started sing og "On the Banks of My Own Lovely Lee" and the singsong started, We stopped for trangendes and

Cadacty chocolate

I left Cork suddenly for County Kerry realizing I must harry, harry, harry; time (Ireland's priceless commodity) was running out for me.

Lingle permusals is culted Kerry's index imper; it stretches its mountainous, heather-scented length from Trajec to Dunquin on the Atlantic (pages 600, 674).

I walked west from the town of Dingle, where Spanish influences are believed to mingle with Grelic tradition and fishing is

the town's live threal.

Down on the 'strand" of Ventry Harbour I noticed some industrious written. I usked an old tian what they were picking up.

"Seawerd," he said, "to put under potatoes

and furtilized.

I told him I was going to Dunquin.

"Is it Kruger's you're stavin'?" he asked, and I nodded, "Ah, you'd be lazy to leave Kruger."

Aruger's real name is Maurice Kayanagh, and his tales are to I and many. Back after some fifteen years in the States, he dwells in a red confed cottage on the Stea Read road

an this "next parish to America."

Callarus Oratory on Dibyle peninsula, an early Irish church, was vested ja 1838 by Lauy Chatterton with much pump and coremony, when she was to Rombles in the South of Ireland. New, climbing over 1 way fences in the ram, I could see it. I tom hert the time-smoothed stones. The old walls, melining inward to form a beelive-type roof, were musty (page 065).

By bus I went to Galway, through 't rales and I interick, winding through Old Work towns, often the River Shannon in sight.

Women's Flight from the Land

but I passed no forests, for Iroland's original wealth of timber was misused. Today a national program of reforestation by pes to build a new supply. Natural resources are limited. To live, Iroland's imports must be a sea, but her exports, mainly agricultural, are tower. Casef export lately is not meat or eggs. In Ik, but, as one Irishnan sacly put it, is a pity, but we export our own people!"

Lust year, 2,000 people hought one-way

thicers to the United States between May and August. More than half were girls,

From 1942 to 1936 about 69,000 girls left the Republic to work althout, over two-thirds of them under 25 years of age. They leave by ocean liner and plane. Ireland's total

population is about 3,000,000.

A young girl in critical frock waved to her parents and brothers and started for a plane the fine evening at Shannon Alreatt, near Limerick. While the wind whipped her bandaman, her family called her back and could not hide their tears, nor dol they care. They ranget at her dress and bands, and tried to hold her, but she finally ran, new crying herself, to the plane which would take her thousands of miles to a new life in thousands.

It is not easy to fill qualifications required by United States authorities for visus and sponsors. Each immigrant must have someone in America to be responsible for him.

"Why do so many garls emigrate?" I asked a woman who was making a fair living in

Ditelin.

"They're looking for adventure. They could find work larte if they wanted to look," was her crisp answer.

I asked an old man. "They're too proud over here to work at some things, but they'll

that disches on the alber side!"

But the girls say that on the land they might as well be slaves. Even the lowliest job in Dublin carns some money, but work to the lanely cuttages yields only drudgery. Water must be carried from a field. Cooking must be done over a low turi fire. Only the dim glow of a cantile or oil lamp furnishes light. So women are in fight from the land.

Selling Behind the Counter

Galway, "City of the Tribes" and traditiona, city of the West, mixes undern manners with ancient streets and Spanish arches.

I worked here in a small department store. Saturday marning I stood in the center of the four-sided counter with a raw of beits hanging above my head. The shop resembled an American variety store, with books, saucers, and cigarette cases on display. Procestinged from pennies for pins to guineas for the entire. Smiling culterns who sold behind the counter showed me the stock.

Wemen in black shawls from the west and carrying woven shapping leags, girls in English sweaters and tweeds, men in homemade suits, in Connemna weaves, stopped and

looked and baught.

"Will this eye a frock scarlet?"

"How much for pins? Sixpence! That's much," and the shopper put them down.

A tall, spare man, becaused by wind and sea, bent over the pins and needles, scap and boldby pins ("clips") and besitantly asked the if I had seen his wife.

anglish tourists bought Rinso and Lux (parkaged in Ireland). Soap and touthpaste sold here were made in Ireland. Much raw material and spare parts for metograps are imported, but many items are assembled or rackaged on the island, from bord cars down to corn takes and aluminum tempors.

A grown! collected at the chira counter, someone hunded me a dish to wrap. It was Pyren, as familiar to me as my own kitchen.

That same week came the Galway Fair. Its first day featured pigs. There they were, hind legs hubbled, on straw, squealing right up to the hotel steps on Eyre Square! Beyond stood horses large and public-looking, and stardy Connemium points (page 601).

All around were buyers, contrails flying, ash sticks waving, "bandlashing" for the horgain, looking like enemies but agreeing good-naturedly on "luck money," the part that's

given sack.

'I'm doin' you a good turn and you don't have the sense to see it. Ming you, 'tis a fair price!' stormed a tail trishman, while a receable little man listened patiently with his hand on his horse.

Casual observers suddenly whispered to the buyer and pulled bian back as he started off in great disgust. Then arm in arm the two sealed their bargain.

"They'll argue for ten hob and dripk up

n poundl" said a man at my elbow.

Cattle and sheep sold on the second day, starting before dawn; by poon only calves remained. It was the sound of Ireland—cattle lowing, culves bawling, and an occasional buasas, with a fine mist wrapping it up.

Aran-30 Miles and 8 Hours Away

Rain and wind whipped Galway Bay. Fat sea gulls creed mournfully. Beyond the locks, whitecaps edged the chappy sea. Cattle and norses, courning about with people on the quay, were testless to be loaded for the Aran Islands (page 667),* but the captain of the Dan Asugus was undecided.

"The wind is wreng," he said. "The cattle would be all right, but the horses—I'd never land them. The an awkward day." He applified at the sky. "The forecast is one. I know twill change. The awkward day."

Next on raing we sailed. I wore two woolen skirts, three bleuses, jacket, raincoat, wool socks, and two hats. Still my teem chattered.

Shipmates were a telephone sepalrount; a young Irishman studying water-supply im-

provement for Kilranar, main village of the three islands, some 50 mbes from Galway; an American couple; young people from Belfast; English tourists; and islanders—women and men of Aran returning to their homes with pigs, cattle, horses, or sheep they had not sold at the fair, and with figur, pails, soap, face powder, and rope.

Islanders' homespans were richly beautiial. Some were chad in bine-and-waite tweed One old man wore a handsome black-and-g dd mixture which his wife had woven and fash-

ioned into a suit.

We were eight hours reaching Kilronan on Inishmere, the largest island and the last stop

First, parsengers and stock for two smaller islands had to be transferred to curraghs, fragile tarred canvas craft that belibed about

on the waves (page 60%).

Soon a sad-eyed cow dangled in a sling from a crane and dropped into the blue-green sea with a mighty splash. The quick islander holding the lead tope grasped its heat, and the animal began to swim to share behind the strongly rowed curringly. Horses, too, leas wildly falling the water until the sling cropped off, swam behind the curringhs. Pigs and sheep rule home in the bottom of the curves craft with flour and pails.

As we got under steam again, someone discovered a lone curriagh following us with shouting, gesticulating orders. One man s cow was still on board! Back we went, and bassa was lowered to the bring, amid cheers!

Galway is the gateway to Connemaca, levely land of mist, moot, and mountain; through it, the, you can follow the chast read to Spill-dal and Carrarce, another Gaeltacht district

(page 668).

Walking near Carrarse, I saw thatched costages trafed heavenly blue—as if thin that color might have fallen—and banked with germiums as red as the therry wool skirts the women wore. Here greeting was often just a shake of the head sideways, as if to say. "Now, ran it be you, Tom?"

Dublin-Genial, Conveded Capital

My last stop was Dabler. As my train pulled in, I remembered a prood saying from County Cork: "Belfast was, Dublin is, Cork will be—."

Doblin is—bustling, friendly, cosmopolitan against a background of stately haddings and age old charm. The development of power on the Shannon, the Liftey, and other rivers has brought industry to the Republic's political

*See *Timeless Acass." by Robert Cushman Murpay, Sarional Georganic Macaciae, June, 1951



Two Farmbouses in Every Three Depend on Pear's Dark Bricks for Their Heat

The state of the s



Bridget Sullivan, Hame from Her London Josa Sets Out to See Killonslin's Puck Fair

A pay to accomply to a last dispersion of a state of the properties of the contract of the properties of the contract of the c property of the state of the st but may be a Board as per or real to be really and the contraction

and what should be and a with some term ation proper 1), do , the care, investible grant profession by Center a time to we will profe our process of stranger of all this towns have more the city at strategic paints to relieve the concentration of people and factories.

In a mehant of Live, some content Young buildings waters prest digrature franchy College's combled courtyard, I descovered tree-shaded College Pulk as mady at of shift क्ता है। जारती विशिव्य हैं है है है कि होता है। विश्वविद् taxis, buses, cars, and sprinting Irishmen (page 657). In Trinity Library was the rare Book of Kells (Ceansanus Mar),

At the National Museum I saw the sprawl- 2 There is the open the shighest deer, or 1 had petrieved to and eighand in a case a Trinity College Museum, mounted and antelievable, stood the great at k. bird of times past.

To Abber The use and Bird Market

That aget from the or world jet at a more Abbry Heart I bear a preparal de per · I comedy of the West, Kath Ko h , sad the Iright laughed at Laemselve.

A second particle by way one becomes up to ing not the land market in a lang year St. Patrick's Cathedral, where I is neled with men. loss, and little girs in their tell as arm. If a pind familiers, for 18 or 20 shilllings for shit a limnet or a lack and core at Lor or in a paper bag.

"There's the best of the lot! Won't do . ry harm to look at that one!" the sell-: 1.19 pointing a sever for his a serif the amost

rate on the brak with

A Last O'Sullivan

My friend indige I at high the lander of the Catheoral, still talking and letening. An old man on a near beach reminisced " When I was a way a strange thing used to happen. Water under St. Patrick; walls burst through the floor. Feeple came from all over Dublin bringing jugs and buttles, backetand pans, to a or

"Would they drink 11?"

"They would-and and to it and keep the

erain. Twas good lark!"

My kest chat was with an U sullivan of the lrish kolklere Commission. He gave the a Lind of benediction. When he asked where my people came from in Ireland, I told him I didn't know

"No matter." he said. " Twill be written in God's Book "

And so it will

Saving Earth's Oldest Living Things

By ANDREW H. BROWN

Hart Bransach from Philodack, to Rayment Mann, at the Long.

THE CLOSER we drew, the more enormous the living column bouned. It was the mightlest of a thousand file Trees (Sequoia giganica) in California's unspoiled South Calaveras Grove. As we reached out to feel the patriarch's rough back, one of our party, bursting with information, tried to speak.

"It's as high as a skysera-" she began.

But a U.S. forest ranger with as lifted his hand; he and the lady were old friends.

'Hold the statistics a moment, please. Let's

just stop, look, and listen fire

Other immense cianamon red trunks towered for above adjacent pines and first that were giants of their own kind. A trook gouded near by. A squirrel twitched, then "froze" on a branch, Birds chirped alott,

We shaped to mer le padred grant d. Leg and back mustles reminded us weld paid a price to reach the cathedral hush and majesty of that arterf-the-way spot. Eight panishing mices of rutted, muddy fire roads had forced the use of shovels and low cables, even though out jueps and tracks had four-wheel drives (page 684).

The fact-packed lady could contain herself

no longer,

"This is the Louis Agassiz Tree, named after the famous zoologist and geologist. It is high as a 20-story building, wide at the base as a city street, heavy as a desiroyer, and probably as the as the Christian Ets."

"Besides which," the ranger said quantly,

"it's big."

Louis Agassiz, one of the greatest of all sequences, was certainly impressive. Its heroic girth shrung men and girls of our party to puppet size. Far above, the tree's branches and swelling top were dwarfed by distance.

Limbs Larger than Many Trees' Tranks

"An old stag-headed sequila's branches start 100 feet or more up the trunk," the ranger said. "You need binoculars or a helicopter to appreciate their soc.

"A single limb on the General Sherman Tree in Sequent National Park is nearly 7 teet in diameter and 150 feet long! It's larger than record specimens of many more familiar.

trees" (page 680).

The National Lieographic Society had sent the writer and the San Francisco photographer Raymond Moglin to record the splender of the South Calaverns Grove. Last major stand of Big Trees in private ownership, it grows on Sierta Nevada slopes 70 miles southeast of Southeast

Your Society has been an important contributor to the purchase of irreplaces to high Trees. The Society and individual members in 1921 completed a donation of \$100,000 to help preserve the intest of the sequalas in the Giant Forest of Sequois National Park It now supports efforts to set aside the South Calaveras Grove as a California State park for the future pleasure of all citizens.

Just a century ago next year, hunters and gold seekers it aming the forests of Calaveras Carnty, Cabiornia, discovered nearly unbelievable trees. They were so tage the linders knew reports of them would be greeted

in the world at large with jours.

Blg Tree Stump Made Dance Floor

To dramatize their find, men cut down the biggest tree they rould tocate (a 22-day job for five fallers), smoothed off its stump, capped it with a pavillion, and staged cotillions and quadrales on it, with as many as sixteen couples twirling and bowing (page 684).

The dancers' feet beat on wood that was growing uparly 200 years before Charlemagne founded the Italy Roman Empire. On the trunk of the same fallen tree enthusiasts laid

out a bowl og alley.

An artist, Edward Vischer, later drew sketches of the Dancing Stump and other scenes in the grove to pudicize the arboreal marvel. One of his drawings snowed a herd of camels pludding past the huge trees.

This was no imaginative fancy, but a true record. For Vischer accompanied nine Mongolian bactrians when they shaftled past the sequoise in 1861, bound across the Sierra for

Nevada silver mines.

When Big Tree measurements first were quited abroad in scores of feet, listeners were vehicles in protest: "You must mean 'nelest" was the feaction.

I or proof, promoters skinned alive at least two great trees in the North Calaveras Grove. Carefully marked for litelike reassently, the

*See, in the National Geographic Magazine "Amone the Big Trees of Cartornia," by John R White, August, 1934; "National Geographic Society Completes Its fields of Big Trees," July, 1921; and "Our Big Trees Sayed," January, 1912.



I wenty Men. Finger Tip to Finger Tip, Barely Encircle General Sherman's 102-fact Ward

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But Tree Visitors for a Handred Years Have Made Murphys Hotel a Way Stap

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no or so Mig Tree groves count only about 20 000 led viduals 10 feet or more in diameter. This number, about 12,000 grow in Sequinant Kings Canyon National Parks.

All Big Trees Would Not Cover Halfthe District of Columbia

All the living Big Trees I ft standing in their nutive range occupy scarcely 15,000 actes. If miniculously transplanted across the continent, they would not cover half the area of the District of Columbia.

By contrast, 1,947,000 acres of redword

(Sequena semperations) pensin,

First write men to see Sierra sequoias (in what is now Yosemite National Park) were members if the exploring party led by Joseph Reddeford Walker, journeying overhand to California in 1844

But the Big Trees of the North Calaveras Grace, "effectually discovered" in 1852 (there were some earlier claims), were the first giant sequoist to become known to the public.

Soon much visited, the North Casaveras Grove, with only 158 trees, was thought for several wears to be the most extensive group of Big Trees. But when the groves of Yosenite and the southern Sierra were opened up, the trees of Calaveras loss their exclusive claim to interest.

By 1870 most of California's Big Tree groves had been beated. One small group of giant sequelas, however, was reported as

recently as 1953.

Udaly enough, the South Calaveras Grove, least-known major stand of bug Trees lies but a scant five airline miles from the historic North Grove.

The 1,400 acres of the South Calaveras Grove extend for three-and a half miles along 1 ath sides of sparkling big Trees Creek. Here is a wilderness reach sheltering 947 giant sequoias (563 of them more than six feet in diameter at a man's bright). The tract also contains some of the finest remaining giant sugar pine and other Sietra cutilets.

The North Calaveras Grove became Calaveras big Trees State Park in 1931 as a result of the successful campaign of the Save-the-Redwoods League and the Calaveras Grove

desent in Rion.

It has close to a paved highway. Only fire and logging roads as yet reach the isolated South Grove.

South Grove Sought to Enlarge Park

The U.S. Forest Service, the State of Califormia, and the private owners of the South Calaveras Grove have been negotiating for several years, with the goal in view of settles aside the South Grove for a State park to be linked with the North Grove. The present owner is the Pickering Lumber Corporation.

Before leaving the Calaverns grove area, I stopped at Murphys Hotel (formerly Sperry's Hotel) in the little footbill town of Murphys. I wanted to see the copy of the inn's historic register. Old-time visitors used to test here on the way to the Big Trees (page 681).

The register of that gold-country bootely, held nuggets of interest. John Hanson voguely claimed the "mountains" for his home, J. R. Kennedy the "valley." Old Dan the Guide registered from "God Knows Where."

U. S. Grant, Mark Twain, Horatic Alger, Jr., Wm. R. Hearst, John J. Astor, Heary Ward Beecher, Charles Francis Adams, and Josh Billings signed the book exactly as here printed. A "Miss Rasberry" wrote her name just before J. Pierpout Morgan and Mrs. Morgan. (The Morgans got the Parlor.)

One Gilbert Miller was hilleted in the "Hell," but the toom assignment was later crossed out and "Not Warted" written in One guest registered for "Imp. G. P. Burlongane & 19 of the Chinese Embassy," adding, "from the balance of the world struck this for the last place—want to see the big trees & dee."

Tree and Plate Honor Stephen T. Mather

We motored south to big Tree forests of Yosetside National Park and Sequoid and Kings Canyon National Parks. In every grove we saw individual trees of melodramatic bulk and soaring russet groups.

In Yosemite's Manposa Grove stands a very result of the paymory of Superior ately marked in paymory of Superior Mathet, the father of our National Park Service and its first threaten. A broade page in Sequin National Park also becomes the disserior of the resonantumed-conservationist

It was New Year's Eve, and snow blittcheted the ground, when we reached the Giant Forest in Securia Park. Here, in 2,587 acres of glotlous Hig Trees with a sight of jagged snow peaks, are concentrated forest scenes of over-whelming grandeur.

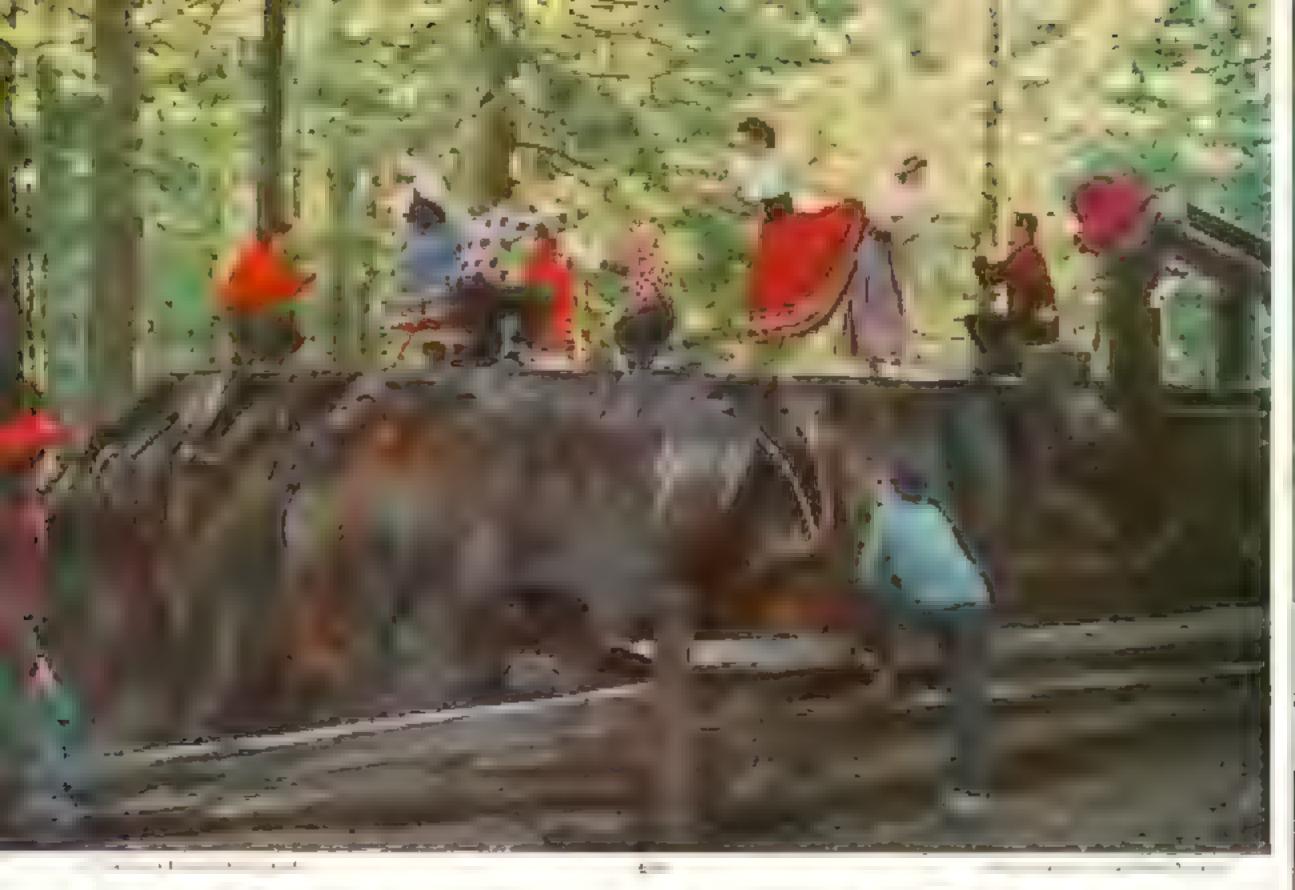
In contrast to the all of General Sherman I tee, laterst sequoia of them all (page 680), are the wast red organ-pipe clusters in the Caugress Group. Above them on a hill broods the colossal President Tree.

We climbed in and out of the Room Tree (page 689), litted our heads to see the High Pine growing out of the broken top of a tall sequelus, and examined the foot-deep claw marks in the Bears' Manicure Tree.

Not only it, awe-inspiring aspect that also



Latth's Senior Residence Big I see Stord in Christ's Pene; the Cladest Space 3 56 the area at the control to the control of th



Youth Treads on 13 Centurys; Dancing Strop 1- 27 Feet Wide

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a geologic fast sty, structure, and like baints,

Sequena gigantea is a wonder tree.

Ancient lineage as well as age distinguished the Big Tree. Its carliest ancestors shared living space millions of years ago with giant cept les—plesiosaurs, is biblyosaurs, dimeasurs, and pieroductyls. In the age of early manimums sequoiss became widespread over much of the Northern Hemisphere.

Sequence giganter, Sequent sempercirens, and China's recently found Abetosequents glopto-troboides, the "dawn redwood," are simply last survivors of those ancient forest types.

Fossil sergioia or net and fideage thiter has little from those of tuday's species.

Frees 1,000 Years Old at Birth of Christ

What a fubulous, enduring mechanism the

Big Tree is!

The life span of some sequoius has paralleled the recorded history of markind for the last 3,000 years. Some, still vigorous, were seedings five centuries before the Periclean period of antient Greece.

from pinhead seed to monumental adult bath, the ling Tree's story is an epic of tenacity

and adaptability.

It is late winter (February or March) when millions of tiny bloss, we tell gigantea's green top. Although it can produce comes before its fifth decade, the great tree is several centuries old before it reaches full productive maturity.

though of male pollen I dl on the female blossoms, from which the cones develop. Twoand-a-half years later the cones are tipe, having attained alout the size, shape, are

order of a line (page 686).

The dried cores shed brown, flat, wingmurgined seeds somewhat resembling dried colled cats. Weighing 6,700 to the ounce, the minuscule seed carries little sto ed I and with it to the ground, any single seed has sess than one chance in a billion of germinating, sprinting, and growing ou

Tiny thakes of marcon gum are released with the seed; they make good reddish-brown writing thaid. With sequola ink Jahn Muir wrote letters that still are legible today.

Big Tree seeds are choosy about where they grow. They need sundght, plenty of moisture, and soil fairly free of forest litter Many seedlings spring up on rich, mellowed humus of thot cruters form open by the fail of ancient trees

Disturbing and exposing the mineral soil multiplies giganted's chances for taking hold. Seedlarks have come up thick as weens on cleared land and on worked-over carta of new road embankments.

Young sequoise have a symmetrical 'Christmas tree' shape, with dense branches clocking the trunk right to the ground. Their feathery foliage is made up of minute overlapping scales (page 656).

As the trees weather adolescence (100-200 years old), they lose lower branches and start thickening out in the trunk. Their tops, however, bold a flame of spear shape for a few

ntura contrates

Young trees grow on ch more capilly that nuture ones; a stripling may add an inch of width in six years, while an old tree may take 40 years to achieve the same increase.

Rate of growth in muture trees varies greatly with food and water supply. One of the largest trees ever felled [the Dancing Stump in the North Calaveras Grove 1 to-vealed only 1,244 annual rings across the radius of its 27-hot d'ameter.

Another cut-down tree, just 11 feet 714

inches across, was 2,017 years old.

As giganted reaches early mutually (500-600 years), it then to out stout lateral limbs Storms and food starvation after fires a b 3 of smaller branches. Its top, now perhaps 270 feet above ground, takes on a dome shape. Foliage grows in condition tofts.

With full maturity and off age 1700-3,008 years) often comes a craggy, weather-beaten look. People have said these veteran sequolas look archaic, prehistoric, "too off to die." Foresters estimate that Yosemite's Grizzly Glant has seen 3,500 years come and go.

tranches wither and perish; eventually they plunge to earth. Forest rangers cell such woody swords of Damocles "widow makers."

About 300 feet is giganted's maximum height. The talkest usually scale between 250 and 290. These Gollaths aften show little taper from the proposed to their first limbs

The Big Tree's flat pedestal of closely matted roots is disproportionately small to support so have a trunk, yet the trees grow so creat and birely balanced that they self out topple unless undermined by fire or flood

Sawed Through, Sequoia Still Stunds

Laggers cut completely through the Sawed Off Thre in the Mountain Home Forest about 50 years ago and it soon died. But the great sequain still stands, the saw that killed it fammed in the cut.

Under the thick outer bark lie the thin, generative cambinin layer and the nurrow hand (a tew buckes) of cream-colored supwood, the only living parts of the sequois trunk (page 695). The vastly preponderant mass of pink-to-purplish heartwood is built of cells that have died.



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A Famous Names Fill an O.J Register

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Integine Came & Walsong Bargara These Longet Lords! They Did to 1860

The figure process of the restored poor South to the rest to the period of the period

Big Trees are tich in Pannin, a chemical whose presence in such heavy proportion helps make the tree highly resistant to furgus and insect attack. This largely explains the tree's longevity,

Almost every mature gigonies shows lite segre. Prequently the wounds are grievous. The Big Tree's ability to survive deviastating

Are is astonishing (pages 683, 687).

Deep black caverns in the bases, with atmost all the central bearished burned but, are common. Awe-struck visitors stare up through "chimney" trees, their hearts com-

pletely reamed out by finnes.

Forest fires, roaring through the woods at intervals over the conjuries, have eaten away all of some trees' underplanting save great knotted fangers with "breezewny" gaps between. Sometime, uncannily, they still sapport clear, healthy trubas.

No tree of sharter life span could repair hurts as deep as those the sequoid unharrically mends and govers over. Centuries may be required to heaf even lesser scars. Major wounds the tree samply walls off with new growth. Large holes remain for the life of

the tree.

Bug Trees inhabiting slopes asually show fire scars on the upbill sides. These charred Capks are evidence that burning lesser trees and facest litter have piled against them from above.

The glant sequalities spongy, ashestoslike

bark does not burn reachly.

Unless the bark already has been scorthed off, a single bre seldom can reach the wood. But a systained fire, fed by adjacent turching trees and blazing debris, may lot the cambium layer. After the charred back falls off, subsequent fires easily lamite the expused would, militing ever deeper damage.

Flames have consumed four-fifths of the bark and sapword at the base of the Gricky Giant. Living tissues lasking trunk and roots are largely sewered. Perhaps to compensate for this foes, "Old Grizzly" has thrust out

massive bullresses.

Amil still the butlefed waterior carries on, the epitome of stubborn will-to-live.

Lightning-struck Tree Burned Four Months

Holking mammoths, towering over the losest, are invorite targets of lightning. Many Sterra orquinas have been struck.

Lightness can and thes-shatter gigontest tops and stripe the tranks with lung sours. but it rarely, if ever, kills a tree. Biggest damage is from times the high-voltage boits set off.

Some years ago in Sequia Park one light-

ning-struck. Big Tree smeldered uncontrolled through four menths, from August to December. Learning of this, I asked, "Why didn't

the rangers put out the fire?"

"Are you kidding?" came the answer. "How would they get up there to hight it, with the h west limb 100 feet above ground and the tire 100 feet above that? They don't equip us with extension ladders!"

Observers have wetched lightning strike a single tree six times during one storm, piling beaps of cores and shattered branches at its uase.

The world's biggest tree in bulk and proba y the steek, the graft a fold first condor fourth in height. Its cousin, the coast redwood, grows taller, and so do some Douglas. firs. A few specimens, too, of Australian eucalyptus, or mountain gam, may outtop it.

Of known trees, only the famed Title cypness of Oaxara, Mexico—an admitted freak, which may be a juston of several trees—exceeds the Blg Tree in diameter and discumference.

Biggest Weigh as Much as Small Ships

How much do the biggest sequeias weigh? Short of catting down a tree and patting every fragment on the scale, there's no way to and in appoint to answer

It's not too difficult, however, to compute the poundage in a single hig trunk; so no weigh 1,200 to 1,500 tans. The most ponderous Big Trees probably approach 2,000 tons,

nisplacement of a small steamship.

Luosing at gigantea's mass of wood another way, the General Sherman Tree contains as much lumber as a dozen acres of average talifornia pine forest. Using every hit of wood in it thropossible, of course, because of augging and sawing Jusses), it would ladof about 25 six poom houses.

But the fact is that Big Tree bumber, very soft and brittle, is not a good construction world. Sequent giganted is not normally a problable spenes to cut. Its limitations start with feiling: Its great weight shutters the hole upon impact, and it tends to break across the grain as well as along it. Simuling the big chunks is a major engineering problem.

As a result, waste in lumber og the Big Tree averages 45-50 percent. In large individuals it may run as high as 80 percent

Big Tree wood tues reflect its unusual duration by.

Grape stakes, raisin trays, funce posts, siding, and flume bounds still consume thousants of bnam! feet.

A single sequoia 20 feet in diameter from Redwood Mountain yielded 7,700 seven-fact fence posts. Two bundred grant sequoras



Figure asset

How Are the Mighty Fallen! This Colossus Will Be Cut into Viceyord Stakes

Two men and a , were saw can overthrow in a less who the patient work of a new and a substitution in the interest of the same and a substitution in the same and a substitution of the same as the same a

word fract.

Only small groups of trees remain in pritate has go with in matter restriction of the hard to be taken there had not upo tected important stand of giganiza's nollarace still is in mortal danger of death by its and saw.

hire the trade gale and lighters passible at the first what it has breeze Nature 3,000 years to produce.

The Nation's tunot afterd to lose the South Calaveras Grove.

against threats to the Big Trees a most since their discovery. Without comments in Citional's I we can be a superfection of the black of the property of the black of the property of the black of the black of the sequence of the black of the black of the sequence of the black of

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Torchbearers of the Twilight

BY FREDER UK G. VOSBURGH

AYLIGHT dims; on the darken of orn, power kitte by a final flare, go out, may there again. More arise as sharlows deepen, until the whole outdoors is danking with the lights of love—fireties flushing signals to their

females in the grass

Down there among the spinuting blades a numeritary glimmer answers not too soon and not too late. In Photinus poculia, a common eastern species I watch at Washington, D. C., the female's answering lamp shines forth two seconds after the male's—a split second somet on warm evenings, a shale later if the night is chilly. To me it seems a glow of pleasure, a thrill translated into light.

Like arget lovers everywhere, these little bearers of the touch are vulnerable to jest if you shire a small flashlight in imitation of his signal, you may get an answer from a female on her grassy rendervous. What hopes must such a lordly light twaken in her

breast*

Her bird and number too can ere. Mask the flashlight in the grass and, when a firefly park appears, give answer after just the proper ladylike interval. Down he comes to your mating beacon—and, may hop some of his clears too.

Seeking the Secret of Gold Light

beience knows more than 1.530 species of fireflies (Lampyridae, from a Greek word meaning 'bright'), and each has its own system of signals. For instance, Mr. Pyralls emits a lone, linguing yellowish that at attervals of about six seconds, usually on a stort rising flight.

Cours of some of the other kinds suggest

stries of thots or dishes.

Watching the winking in the night, one wonders at the work of Nature which taught these blinking little beetles their distinctive courting codes. More wondrous still is their tall light, more efficient than any illumination

markind has yet devised.

Over at near-by Bultimore, children bearing part, cans, and bottles of freelies heat a path to the laboratory door of Dr. Walton D. Mchaoy, inquiring-minded biochemist of Johns Hopkins University. They come in answer to the armonicement that freelies are flying money, worth 15 cents a bundled to gerial Dr. McLitoy.

For several seasons now, the lightning-bug legions of the Maryland metropolis have fananced such essential purchases as markles, dol's, sodas, and hubble gum, or acded their mite to funds for future codege emecations. One girl showed all the enterprise of a Tom Sawyer whitewashing a fence; she oblisted the energies of her friends and collected \$75 last summer from 30,000 fredies. They have to be fresh; on mad contributions accepted.

Losing their limiterns in the liberatory, these thousands of firether are martyrs to seence. (As adults they would die son, anyway.) But their light lives after them. In one of Dr. McElroy's darkmoths I saw the shootly glow of 400 firethes that departed this life in 1948. Their powdered this had aren resting in peace in a deep freezer at 17 degrees below zero. Contigrade

"We've kept some of this for as long as three and a had years and found it would still glow," Or. Mc Eiroy said as he took from the freezer a test tube of the brownish powder.

to the darktoom he poured the powder (at a a bowl and added a little water. The mixture shape with a faint greenish-what light

"That's pretty good: some energy is left after more than two years," the scientist observed "But new watch this."

He poured a clear fluid into the bowl, Instant y the weird light greatly increased

an intensity.

the fluid that produced the thre-tip was a blab-energy phosphate compound isolated from massles of rabbits. It might be called energy in chemical form. Vitamins in food belp make this adenasine triphosphate—ATP, to rebott—which is present in all living things. It provides the energy that enables my fingers to type these words, a rabbit to jump, a freshy to light. Thus the strength of rubbit legs was kinding arow the lights of long-dead lightnag bugs.

How the Firefly Lantern Lights

Scient bits studying fireflies' strange cold light have found that the flash is caused by exclusion of a substance they call lucifering from Latin words meaning "to bring light." A second substance, luciferase, is an enzyme, or catalyst. Acting like a rienewman performance a wedding, it enables the luciferin and oxygen to unite.

Both luctierm and laciferage are contained in the fireflies' myzind macroscopic light cells, along with the necessary moisture and oxygen. They tubes ventilate the living lantern (page)

702).

If you instate Nature by parting these substances together, you get a that, but only one. After that, the printer seems as dead as a lacence out match

Yet the firefly lights again and again, mused Dr. McElroy in his inhoratory. Something must regenerate the luciferin, he deckled. What could it be but the energy that moves as all? He tried his ATP and it worked Every time be poured it on, a flash resulted

Here, then, was the firefly's secret. The chemical energy in its protoplasm resutalized the laciferm after each flash and made it ready to flash again. Luciferia and luciferase seem

inexhaustible, never consumed.

"There's gut to be a source of energy. Now well supply it another way." said Dr. Mc-Eiroy, turning to a test tube of cloudy fluid. This is a highly concentrated extract of fire-tly lanterns."

He switched on an ultraviolet lamp, and suddenly the test tube glowed with fluorescent freely light, ream-cook to the touch (page 701,

rught).

Light Virtually Without Heat

In the average electric bulb only about 3 percent of the electrical energy goes into visible light; most of the rest is lost in heat. In the firefly's light, heat is virtually nonexistent. The insect's temperature is lower than that of the air through which it flies.

Firefly light itself is not well suited to human use, because its bluish, greenish, or yellowish cast makes some colors invisible in its glow. But fireflies and other luminous creatures are important in helping man learn the principles of chemical light.

"Is it teld y preschile," I asked, "that man will eventually bearn to make useful hight on

the firefly principle?"

"Absolutely," Dr. McElroy answered. "I feel sure that man will be note to create cold

light chemically and use it."

In answer to the same question, Dr. E. Newton Harvey, of Princeton University, ladding anth at, an and all the master, and "It is possible at the present time to produce themitapinescent light as bright as the light of the freshy from pure organic compounds, and the isolatous and synthesis of laciterin from luminous animals is just a motter of time. It is duabtful if these compounds will be used for illumination of houses, but they may be used for other purposes."

The question of practiculity of chemical light was answered by Mr. Sylvester P. Guth, of the General Electric Company's lamp ne-

partment, with an emphatic "me"

'Cold light," he observed, "can be produced by chemiluminescence—the oxidation of certain chemical substances. But the cost h is been estimated at \$25 for the same amount of light produced for one 5 000th of a cent in a 100-watt filament lamp and for a 15,000th of a cent in a typical fluorescent lamp."

No one knows what would be the cost of light produced from man-made luciferio, since science as yet has not succeeded in making

it artificially.

Dr. Harvey's Princeton associates. Dr. Amm M Chase and Dr. Howard Mason, are working on the problem of paralying light-producing burders from a small marine crustacean, Cypriama, while Dr. Mckiroy and his former Johns Hopkins codeague, Dr. Bernard L. Strehler of the Oak Ridge National Laboratory, Tennessee, are concentrating on firely laciforin. Next step would be to make the compounds synthetically.

For these scientists, however, creating a heat tent light is only incidental. Biochemists Mo-Edroy and Strehler are delving into a much oligher problem, the secret of Lie itself.

'All energy on earth comes from light, the ight of the sun," Dr. Mcklroy explained "Simlight makes plants graw; we cat wrgetables and gain energy that they acquired from the sun, or we get it second-mind by eating meat from animals that got their energy that way. Fireflies acquire energy in exactly the same fastism,

"In the firefly the energy cycle goes full little, from light to light. By tracing this cycle backward, through lucifer, and suclierase, we hope to find out how plants and animals make use of light for life and growth."

Mysterious 24-hour Rhythm

Fireflies begin to twinkle at twilight. How do they know when it is time to light up?

Laboratory experiments by Dr. John B. Buck, formerly of Johns Hopkins University and the Carnegie Institution of Washington and now at the National Institutes of Health Bethesda. Maryland, shed some literal light on the subject. They show that fireties react to degree of durkness and also to passage of 24-hour periods of time, almost as if they came equipped with a photoelectric cell and a clock

In the laboratory these big-tyed beetles showed plainly that they lavor a dusklike dimness as a setting for romance. They flashed readily in dim light, not at all in bright light, and takely in prolonged total darkness

If (averable light conditions were provided continuously, Dr. buck's Liboratory lightning logs (P. pyralis) had periods of flashing that recurred at regular 24-hour intervals. Though the room was windowless, they began flashing each evening at the same time their free



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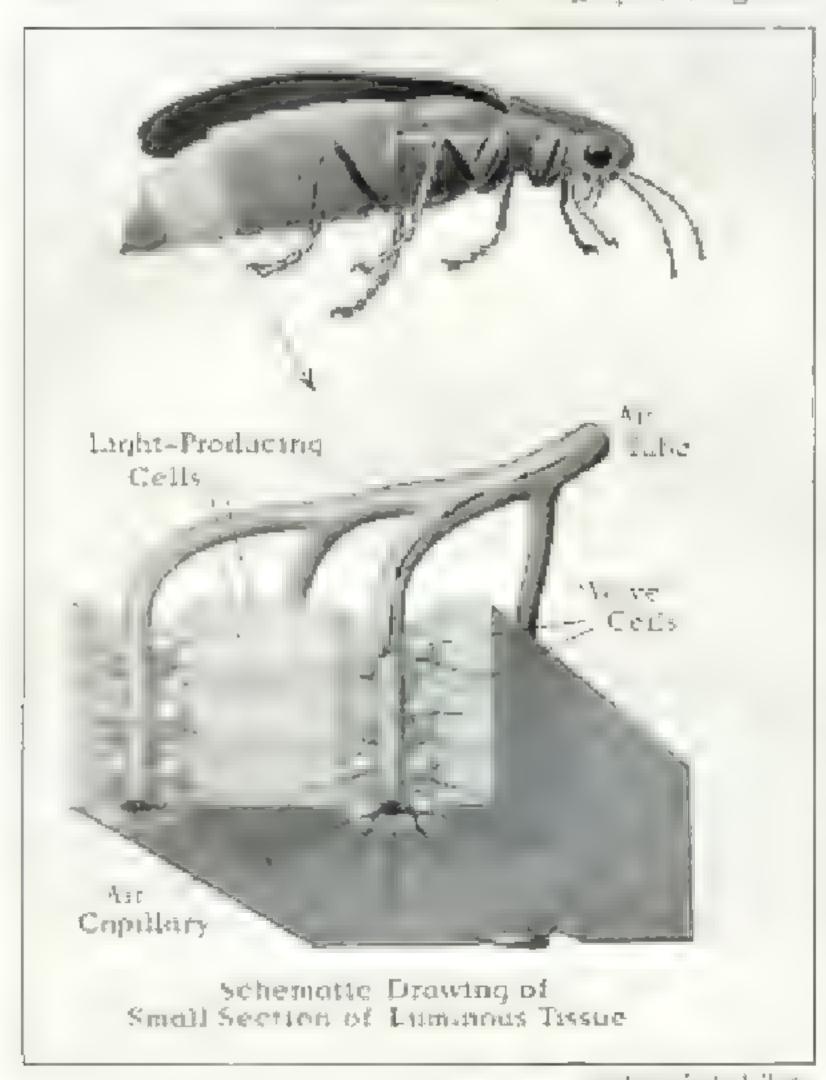
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Tubes Carry Oxygen to the Firefly's Light Cells

Just no a fire wal but burn in a vacuum, the insect's cold consultation expendiate place without exygen. It's here then results from the combination of anygen, unlies to each tell. There light results from the combination of anygen, unliested, and two remarkable substances, hardern and luciferese spaces (97-8). The cherical opercy present in the fively, as an all hard shape, removed erases the tastiern after each limbs. Some scientists have thought the macroscopic round cold in the air pipes might be control value, but the theory has not been proved. Here the artist has samplified a section from the light organ and enauged it about 500 times.

similar to the also unknown mechanism that actuates our muscles. Nothing happens until a zerve inspaise pulse the trigger, so to speak."

Miss Pennsylvanien a Fatal Siren

When the evening is warm, the living lanterns of both seves shine at slightly shorter intervals than when the air is cool. Unduly high or low hundlity may cancel the whole show.

Firedies seen on the wing are almost always

enales. Females of some kinds have wings but serdom thy. Even the farvae and eggs of many are luminous.

Females of at least one species are deadly sirens to so allen male. enticing him to his doam. Reports a Wilmington, Delaware. semulist, Mr. F. A. McDermott: "Males of I hotimus scintillant will come to the thish of a female Photoris pennsylvanica, with the result that they are caught and eaten," Other observers have noted her taste for the scintallating saitur.

Tais canulbalistic "Pennsylvanian." found from Massach !setts to Pannana, responds to potential mate or prey with a single somewhat subdoed tlash. If the ther's signal consists of two to five sharp. greenish-yellow flashes in rapid succession, the swain is Mr. Pennso vanica, acceptable as a husband. But if the light is very short orange-tinted, and given at five- to lessecond intervals, she may soon make a meal of luckless Mr. Scint I-

"Pyralls males also are sometimes eaten." Mr. McDermott informs pre. "There is a

possibility," he adds, "that I Worker's females which do this have already mated and have a requirement for more foud for developing eggs than is provided by the food they consumed in the larval state; so it may be 'Mrs.' rather than 'Miss' l'ennsylvanies."

Most the its, however are not to be a being it all during the research and their standing around theregy for their lamps of love has been stored up in months of predatory life as hive on and in the ground. Favorite prey are smalls

the high votestructive cutvers.

Some Firefless Are Firefless

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the land knows the plantage and larva are male and larva are relied, but its flying males are neutronian us of have only fudiosentary lights—first as of virtually findes to be lies, The same is to e in northern Europe and a cur own far West

Some of cut eastern sinds, too, are freders. True Lampyri lae, they just won't have the lamp

Prized in Japan

Both as a boon to the gatckner and as a buightener of the nights, the firstly is widely appreciated in Japan Larvae of some of the firstles there live in water and ent acquatic smalls

Skilled Japane chierary fly catchers collect thousands of the collections

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When I visited Gen, Leaughe MacArthur's beariqueri es, I from I that among his married from the Japanese was a constitute from the Japanese was a constitute from the second seco



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Fireflies Sometimes Flash in Unis m

Distriction of the long of the land of fireflies, as if some invisible hand were the land of the land

by many Occidental observers in Thadand, Burma, Malaya, India, and other countries and islanes of Southeast Asia.

"I saw such a sight on the river pear Bungkok," Dr. Henry R. O'Brien, of the United States Public Health Service, told me recently.

A shrub about 8 or 10 feet high was full of trellies gaing on and off together. Except that the lights, of course, were not as bright, it reminded me of one of these Christmas trees with lights that turn on and off automatically."

Other reports tell of the same phonomen a on a much larger scale, thousands of firedies in everbank trees for a hundred yards or more flashing on and off in regular rhythm What furbible cheerleader, if any, they fol-

ow, is still the freilles' secret.

"Look for the warmen," the French say. This has been advanced as a possible solution in the case of our common Photonic pyrates, males of which sometimes that in autsonover a half-acre area.

What happens may be this, according to a

study by Dr. Buck:

A male gets a response from a female, and several other males near by wink back smultaneously, taking their one from her of from the one that found her first. Their lights together are bright chough to stimulate another female several yards away. Males near ter answer with one accord, and their flash sprites a third female who in turn gathers her coterie of males.

This chain reaction goes on till many by me males are flashing on and off as one

Fire Beetles Worn for Adornment

Ordinary firetly light, that of P predictions found by Dr. William W. Coblentz, of the Notional Bureau of Standards, to have a usual strength of that 400th candlepower. Loss bright, but often sustained for montes at a time, is that of the biz "fire bestle," Perophorus, family Elateridae, of the American Tropics. Four or five together make a light strong crough an rewspaper type can be read.

People keep these fire beetles in little sugar cane cages and wear them by flight as I ving jewels. In religious processi us in Panama, for example, beetle broothes and barpins gleam with ceric greenish light in the data-

FIESS.*

Often more than an imb long, the locales have twin "head ights" that glow with green light; on their undersole a yellow light shines itermittently in dight. Cords attach them unharmed to dress or hair by passing a pin miles a ratural book of them at the , and of the beetle's body (page 704).

Like our common finely, the hig fire beetie can be attracted by a flashlight mistaken for a female's glow. Collecting specimens this way in Jamaica, Dr. E. A. Chapin, Curator of the Division of Insects at the Smith smith Institution, felt like the larget of tracer bullets.

"I never got so I sadu t flinch when the male came in, he flew so last." Dr. Chapla

told me

One Looks Like a Lighted Train

With a red headlight and eleven pairs of green lights clowing along the sides, the wormlike wingless female of a large South American beetle, Phrisothnia, related to the firetly, looks so much like a lighted train that the creature is called the railroad worm, Similar, but lacking the red headlight, are North American species of the genus Phengodes.

In Cubs Dr Harvey of Projection found what appeared to be a luminous freg. The mystery was solved when it proved that the

trog had been dining on breflies

Brils seem to be more fastidious. Smithschian and U. S. Department of Agriculture studies indicate that firelies rare y if ever

are caten by birds.

Fireflies as well as small boys appear to teach excitedly to boarth of July firecrackers. Dr. Radelf Ruedemann, of the New York State Maseum at Albany, reported in Science that but the evening of the Fourth be "was startled by the sudden flashing up of the rule closs plot in that or har we have a reboys fired count nature, kers . . . about 80 feet away." In the grass or within a flot above it, stores of firefly lights flared on and flashed at a faster pace than usual until the camponad ne ched.

One possible explanation might be that the little creatures were shell-shocked. The insect's sensitivity is shown by the common ervation that the impact of hear-by human footsteps will mase the larvae of *Photoris* and other species to glow.

When his tred, a firetly seems to go late a frenzy of the hing. One has been caught in the screen door and burt. It blinks rapidly, throbbing with light, as if its lum posity is

pouring out with life itself,

Oatside in the fragrant night the chance of light and the goes on, the insect constellations rising higher as dusk fades into dark. Myrad mating dashes foretell that a new generation will carry the torch when spring comes round again.

* See 'Patinism, Builder of the World' by Lub-Manden Natural Georgesens Manager, Neverther, 1941.

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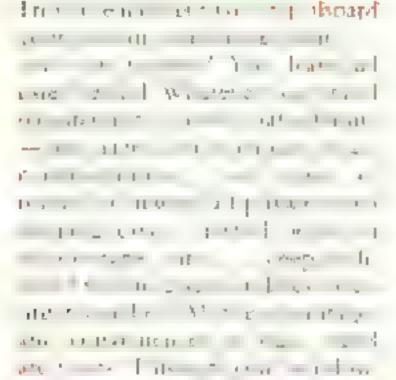


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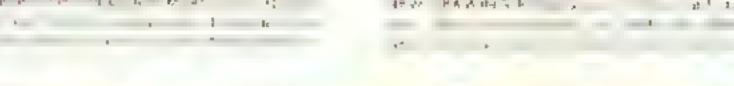
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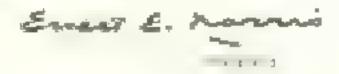
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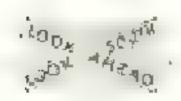
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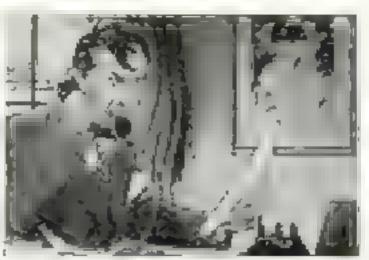
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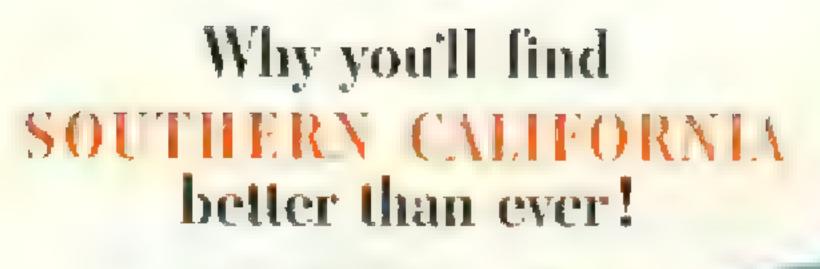
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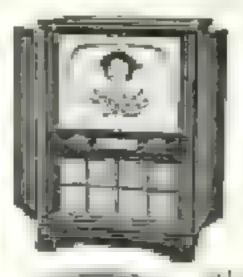
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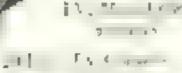
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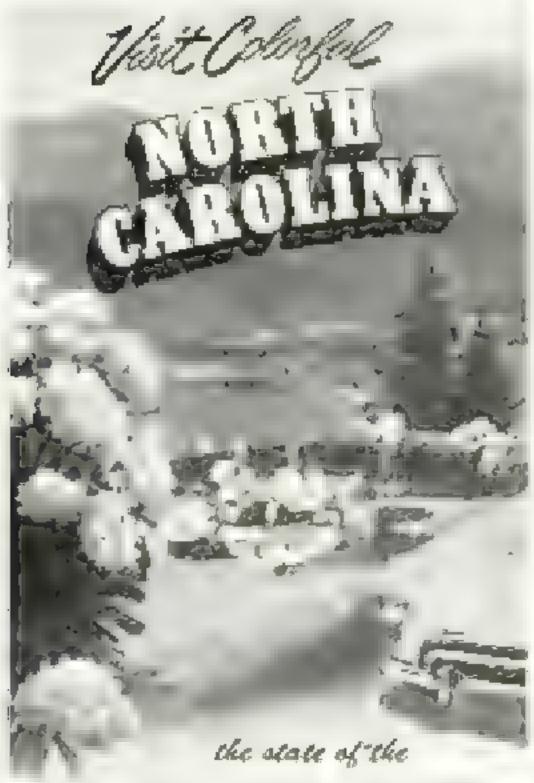
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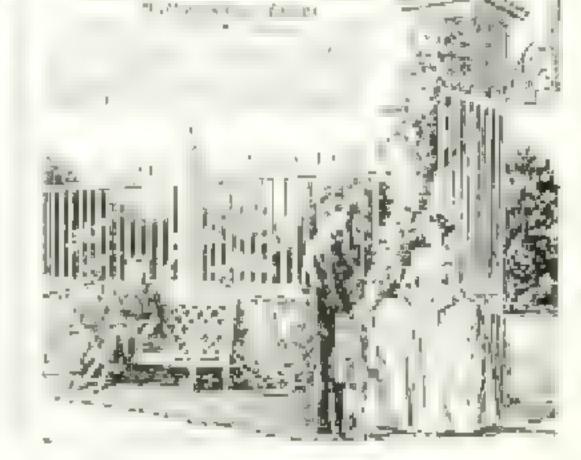
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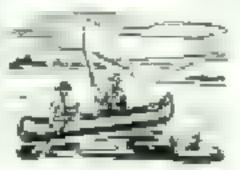
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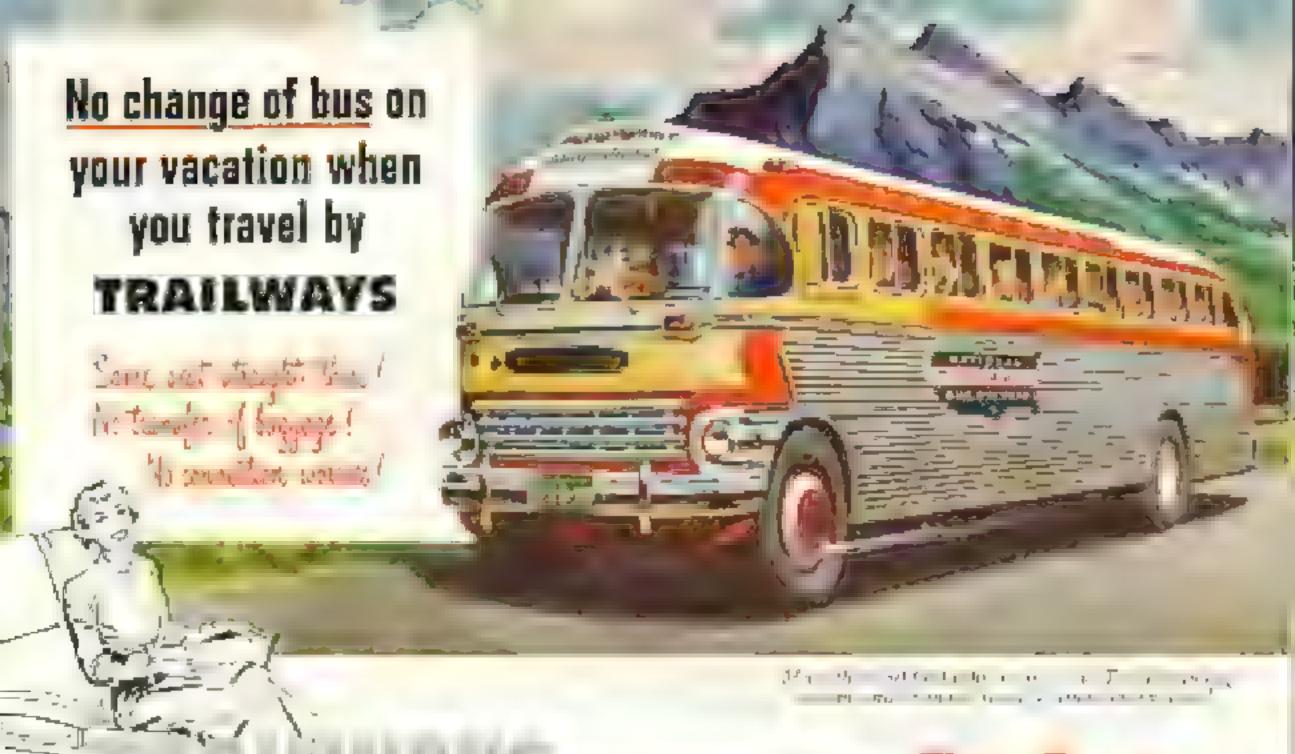
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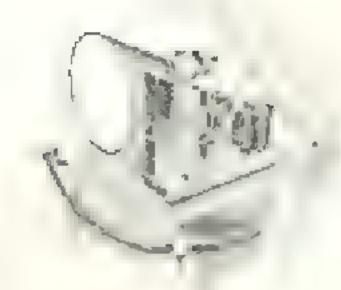


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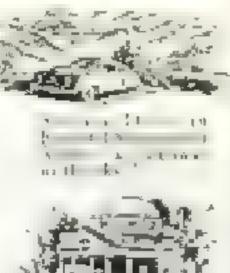


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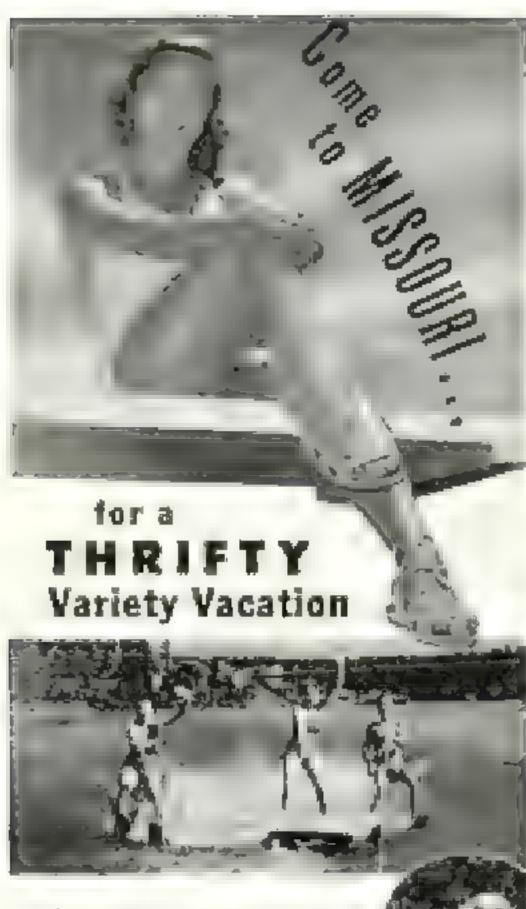
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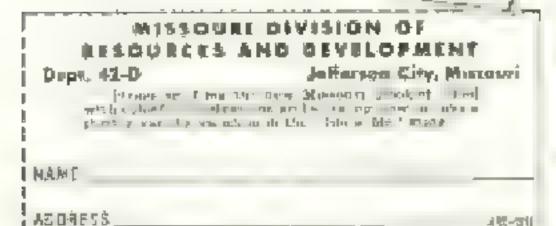
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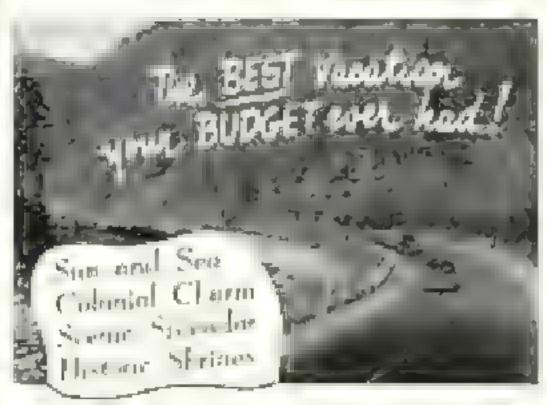
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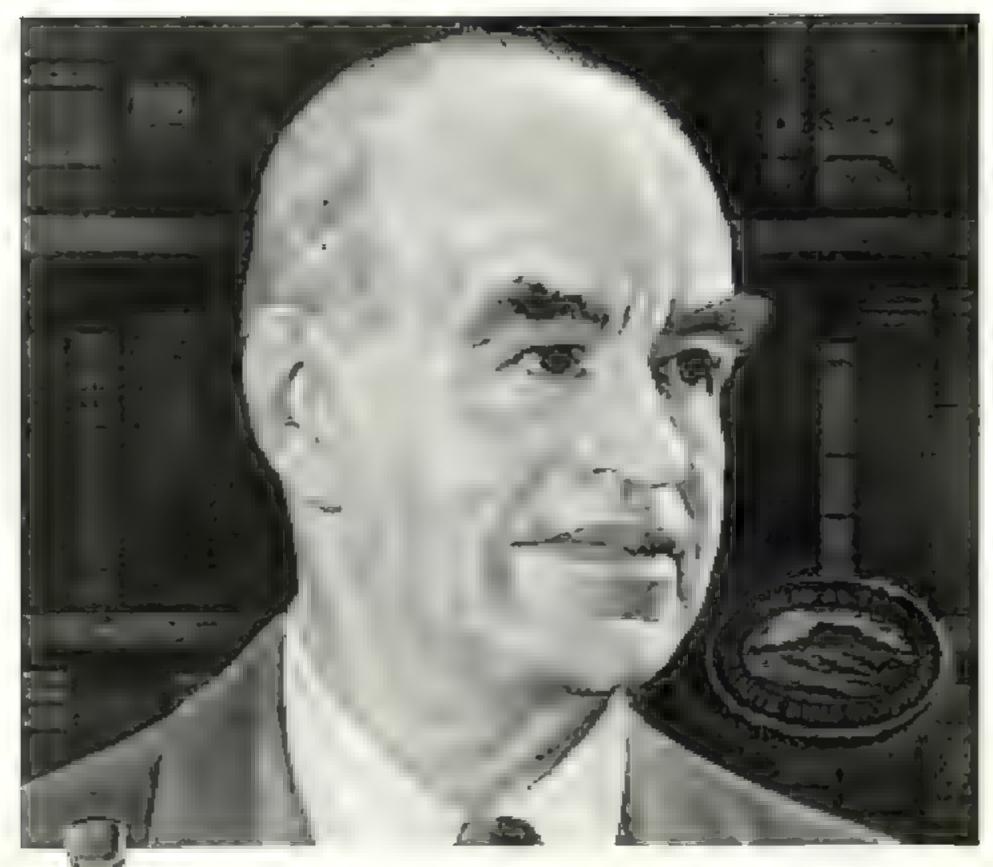
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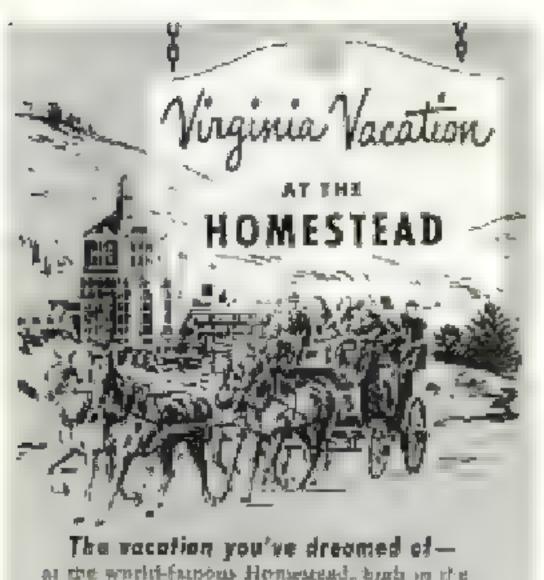
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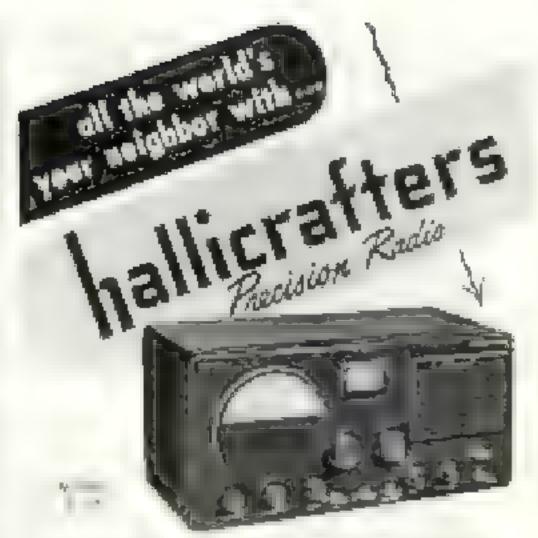


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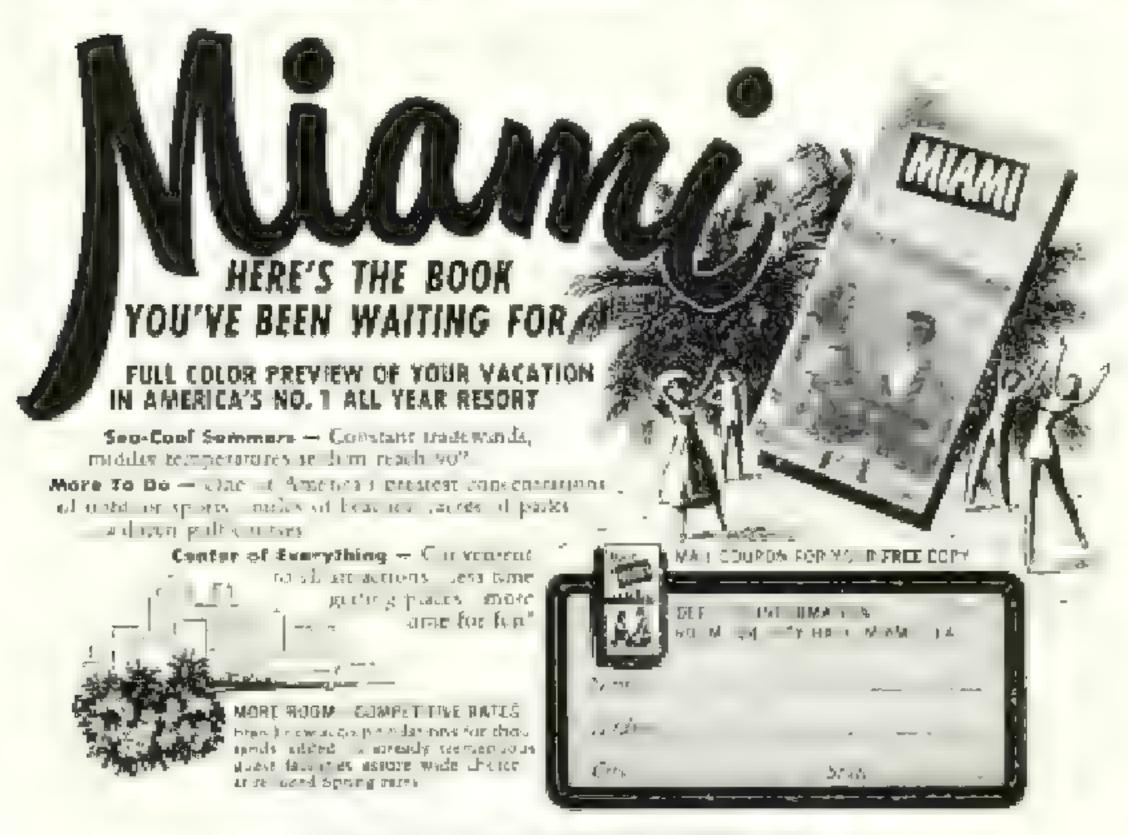
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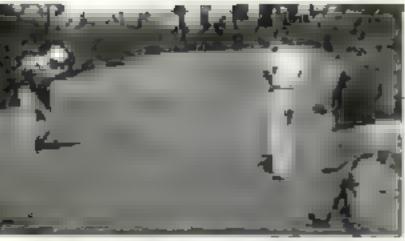
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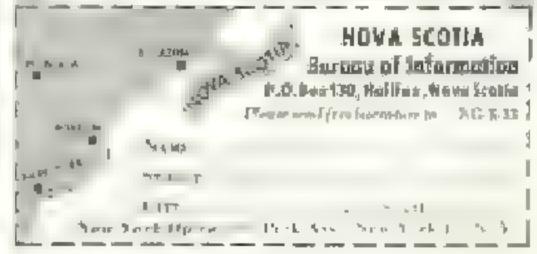
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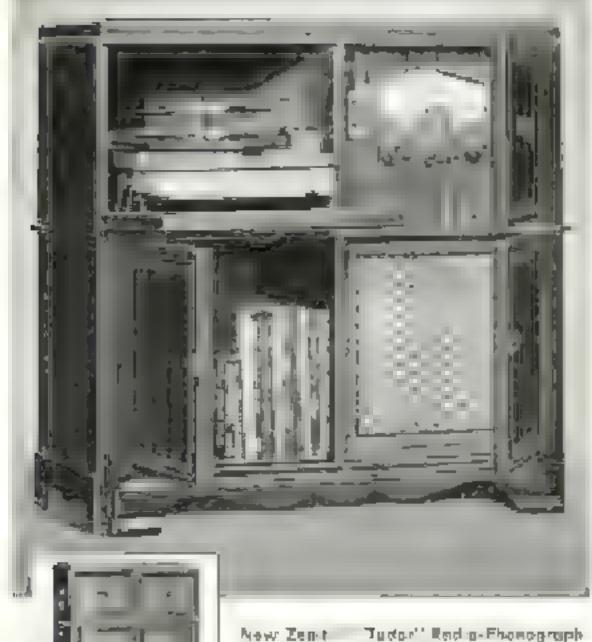


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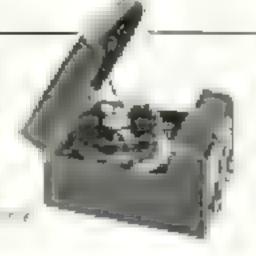
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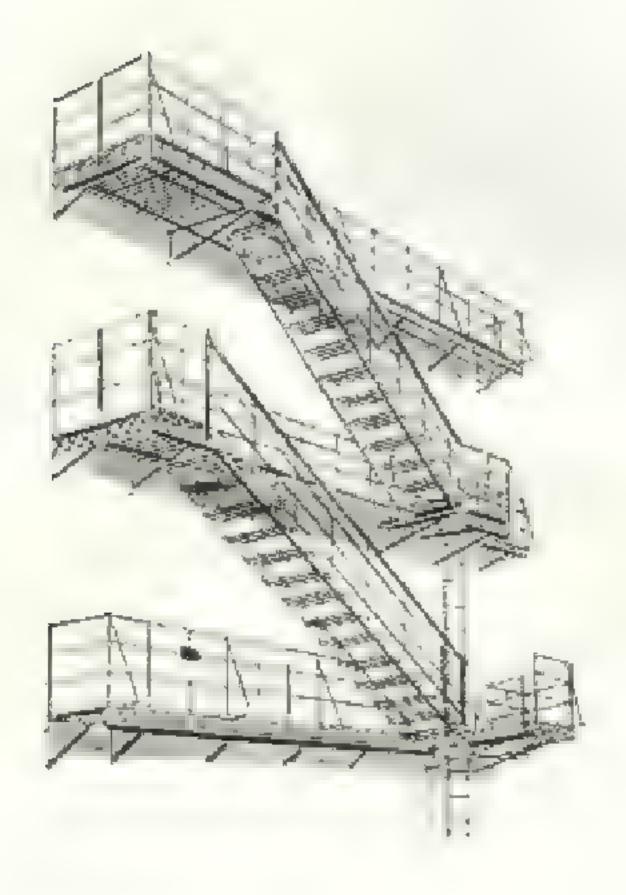
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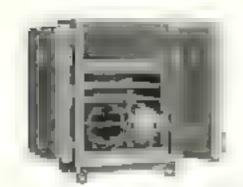
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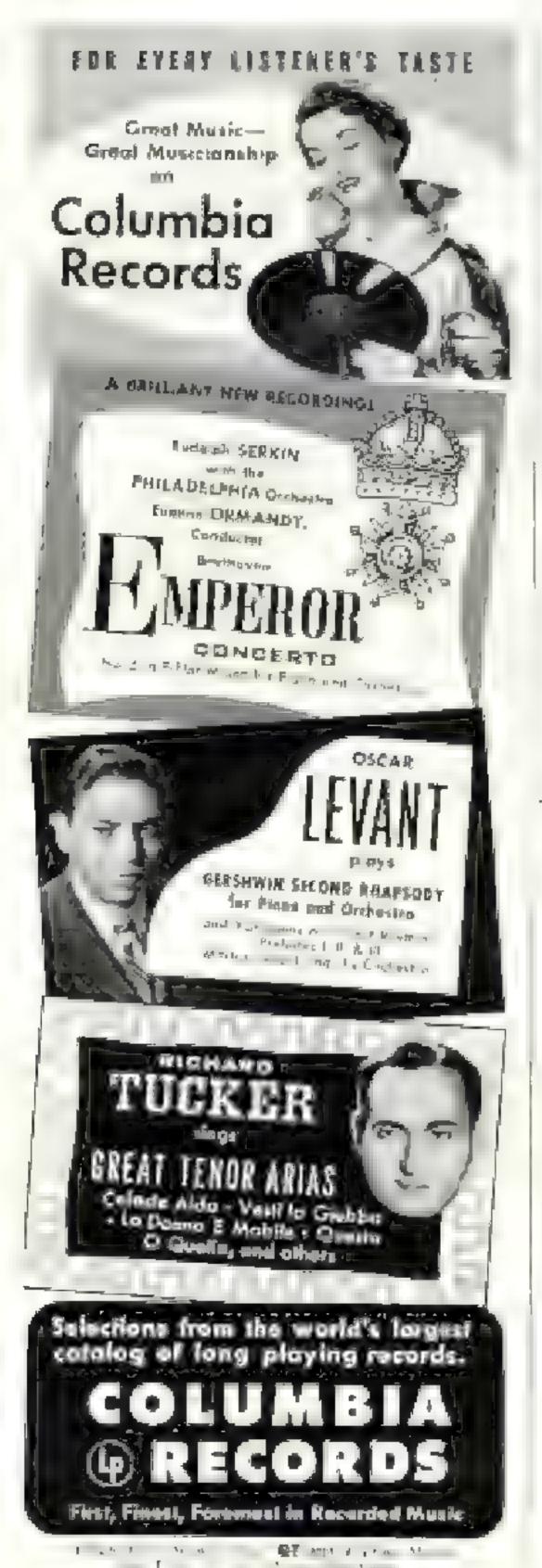


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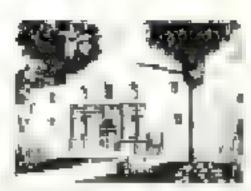
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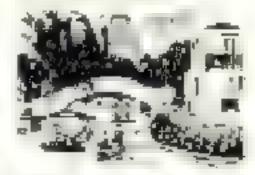


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What doctors say about Overweight



There are three wrong ways to Lose Weight

Through strongers exercise

Author resigne maphyse and activity alone curses relatively little weight loss. Moreover, it places an extra burden on the heart which may already be toned from overweight burgers may also because appetite and cause a person to get more than he

Through quick reducing diete.

Doctars say that practically all "get-th respect?" dacts are doctoned barm than good. That is because so, to weight less may lower a person's scrength and resistant translead weight reduction—tanging from two to three pounds a week—pto or a against these hazards.

Through reducing puls

Medical science has long condemned the use of self-present and drags to reduce weight. Authorities say these drags should be used only when recommended by a doctor and then taken exactly as directed. Many of them may affect the beart or cause other serious conditions,

There is one best way to Lose Weight

The best way for each individual to get weight down and to keep it there, is through his doctor's guidance. This is important because the doctor will determine the cause of overweight which, in over 95 percent of the cases, is simply due to overeating

The doctor's help is necized, too, in determ 1139 when it show an art, may be eaten. He will

also recommend regular exercise best suited to the test sed (a)

With the doctor's publice, the baserds of reducing and attents we glit less may usually be avoided..., and weight reduction, in cases due to overcating, accomplished steadily and safely.



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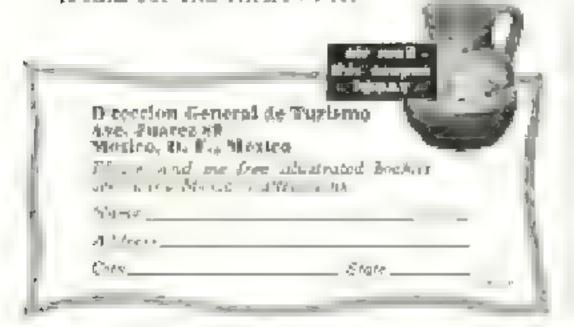
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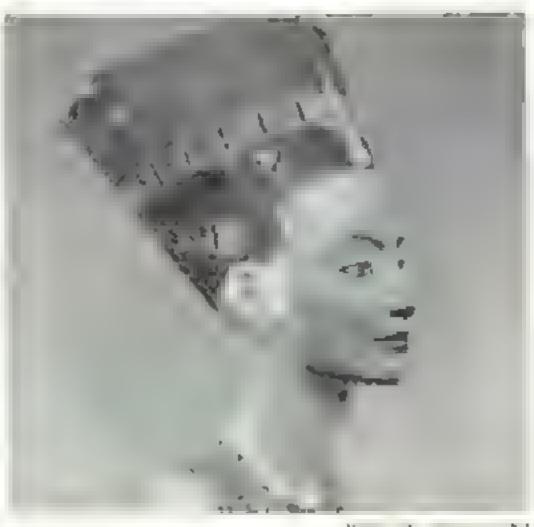
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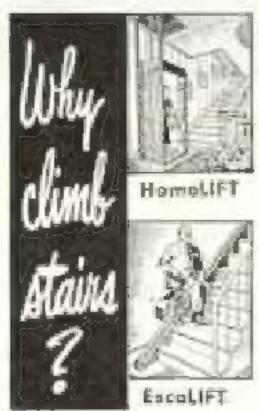
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